Training Supplement to
Winter 07 Vol 7 Ed 1

Journal of Special Operations Medicine

A Peer Reviewed Journal for SOF Medical Professionals

USSOCOM MEDIC CERTIFICATION PROGRAM

TMEPS

TCCC

ATP

PT

Winter 2007 Supplement to the Journal of Special Operations Medicine

This supplement features:

- The Role of the United States Special Operations Command Department of Emergency Medical Services Requirements and Curriculum & Examination Boards
- History of the NREMT
- U.S. Special Operations Command's Tactical Medical Emergency Protocols For Special Operations -- Advanced Tactical Practitioners (ATPs)
- Joint Special Operation's Tactical Medical Emergency Protocol Drug List

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
2007		**00-00-2007 to 00-00-2007**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Journal of Special Operations Medicine, Volume 7, Edition 1	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Joint Special Operations University,357 Tully Street,Alison Building,Hurlburt Field,FL,32544**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**138**	

Contents

Winter 07 Training Supplement to Volume 7, Edition 1

PREFACE

UNITED STATES SPECIAL OPERATIONS COMMAND
Office of the Command Surgeon
7701 TAMPA POINT BOULEVARD
MACDILL AIR FORCE BASE, FLORIDA 33621-5323

We have recently reviewed these protocols for content and purpose with our Advisory Council and have determined that they are the right product for our force. Given the historical debate about what level our Medics will function, these orders give us the right blend of top cover to answer the ambiguous area between trauma and definitive care. As they developed, the most significant tenet of these protocols was the need to extend and cover the deployment capability of the Medic. Recognizing that this need had inherent liabilities both with standards of care and practical training gaps, the Version 3 protocols are delivered to you to help you achieve your mission. While directive in nature, they recognize that the deployed expectations for the SOCM are significant and grow with the Lines knowledge of your unusual skill sets. Terminally, it's a certainty that at points in your deployment you will be presented with urgent medical situations that are beyond your training base. Application of these protocols will enable you to make the best decision without having to second guess any patient management. At the end of the day these 47 scenarios are on paper because they have all happened in a forward setting without the ability to immediately punt. Follow them to the best of your ability. They will kick start the care plan and if you read them all to ground you will see that the end state for all deteriorating patients is evacuation. As time, the AO, and the GWOT evolve and change these need to be treated as a living documents. Review, with feedback, is necessary and critical to keeping these pertinent. At the time of printing we have over 800 Combat Medics in service. These should be known to every one of them. We will ensure that your leadership does its part. We need you to ensure that we are being given the ground truth without varnish regarding their application.

Colonel Rocky Farr (USA)
Command Surgeon
Warner.farr@socom.mil
813/ 826-5442

Master Chief Glenn Mercer (USN)
SOCOM Surgeons Office
Enlisted Advisor
glenn.mercer@socom.mil
813/ 826-5049

Introduction

CPT Steve Briggs, SP, APA, MPAS-C

In Volume 10, Issue 8 (2006) edition of the Military Medical/NBC Technology, the USSOCOM Surgeon, Colonel Rocky Farr, was the cover feature. The article was a question and answer session that focused on "Ensuring Medical Care to the SOF Standard." Some questions posed to him included challenges facing SOF medicine, the disparity within the various USSOCOM components and Research and Development, Title X, and other responsibilities germane to SOF medicine. COL Farr addressed many different issues to include the Command Medic Certification Program, Tactical Combat Casualty Care initiative and medical equipage of SOF. For more information on this article you can go to http://www.military-medical-technology.com/.

Over the last twenty plus years, there have been issues and incidents that have shaped the face of SOF medicine. In this edition, the main effort is to get out the changes in the Tactical Medical Emergency Protocols (TMEP) and publish the accompanying TMEP drug list. In addition, I want to share with you some of the things that have affected the decisions and formation of the Command Medic Certification Program.

When I started the "Q-Course" 25 years ago, the course was divided into three phases much as it is today. The prerequisite for attending the course to become a medic was that you needed to have attended the 91B (Combat Medic) course. The medical training conducted during Phase Two was further divided into three phases. The first phase of the medical training (300F1) was conducted at Fort Sam Houston, TX. Upon successful completion of the course, you went on rotation to one of the Army's many different hospitals and then finally to the "Medlab" at Fort Bragg, NC. Upon completing Phase Two of your medical training, you finished up your team training (Phase Three) and graduated as a 91BS: MOS or Military Occupational Skill 91B (medic) with an additional identifier S (Special Forces). During my time as an instructor at the course in the early and then mid 1980s, training at "Med-lab" was temporarily shut down because of someone's concern about certain medical procedures that our medics were receiving training on. Questions arose about protocols and the lack of certification with known accrediting organizations. Most training was based primarily on mission requirements as seen by the eye and the experience of the instructors. At times, the standards were vague. In order to standardize training, many instructors adopted the most current civilian standards (or their most current read). Change can be good; the days of failing out because of instructor bias is gone. Our SOF schoolhouses abide by the training command's regulations; Air Education and Training Command (AETC) for the Air Force program and the U.S. Army Training and Doctrine Command (TRADOC) regulate the Joint Special Operations Medical Training Center (JSOMTC). The overall excellence and quality control measures for training our SOF medical forces are constantly evolving. Many of the protocols and requirements imposed in the training cycle serve to set standards, enhance the value of training, diminish training accidents, or/and mitigate unwanted publicity.

Even so, in the past three years I have found myself having to respond to a few congressional inquiries or Commander's requests for information in reference to medical training issues/incidents, allegations, and misperceptions concerning some sort of SOF medical training. Most of these inquiries have centered on sustainment or decentralized training at unit levels versus that of our schoolhouses. Even though innocent and with the best of intentions, some actions may have much further implications that can affect our training centers. Therefore, some snippets of training information have been included for those desiring to conduct medical training at their unit levels.

SOF medical training has been, and always will be, centered on preparing our medics to conduct the essential task required to successfully complete the Commander's mission profiles. Where applicable, civilian standards of care will be infused into the training and where civilian standards are impractical, we will establish our own standard of care.

Over time, the similarity/disparity of both civilian and military standards have waxed and waned and evolved. A timeline of the National Registry of Emergence Medical Technicians (NREMT) evolution with associated comments as to where the military and SOF medicine stood during the same time period has been included in this Training Supplement.

The realm of science and medicine has dras-

tically changed since I started out as a medic. In 1983, I remember a young kid who came into the clinic with a chief complaint of eating peaches for breakfast and defecating peaches a half hour later. Upon further questioning, I found out that about the only digestive process was that of mastication. Upon first look at him you could see that he had wrinkled skin turgor, wasting of muscle mass, and a weight loss of about 50 pounds in a three month period. In short, we worked him up for cancer and sent him off to Walter Reed Army Medical Center. About five to six months later my PA looked at me and asked if I had taken good precautionary measures; the Soldier I had seen had just succumbed to a disease known as HIV.

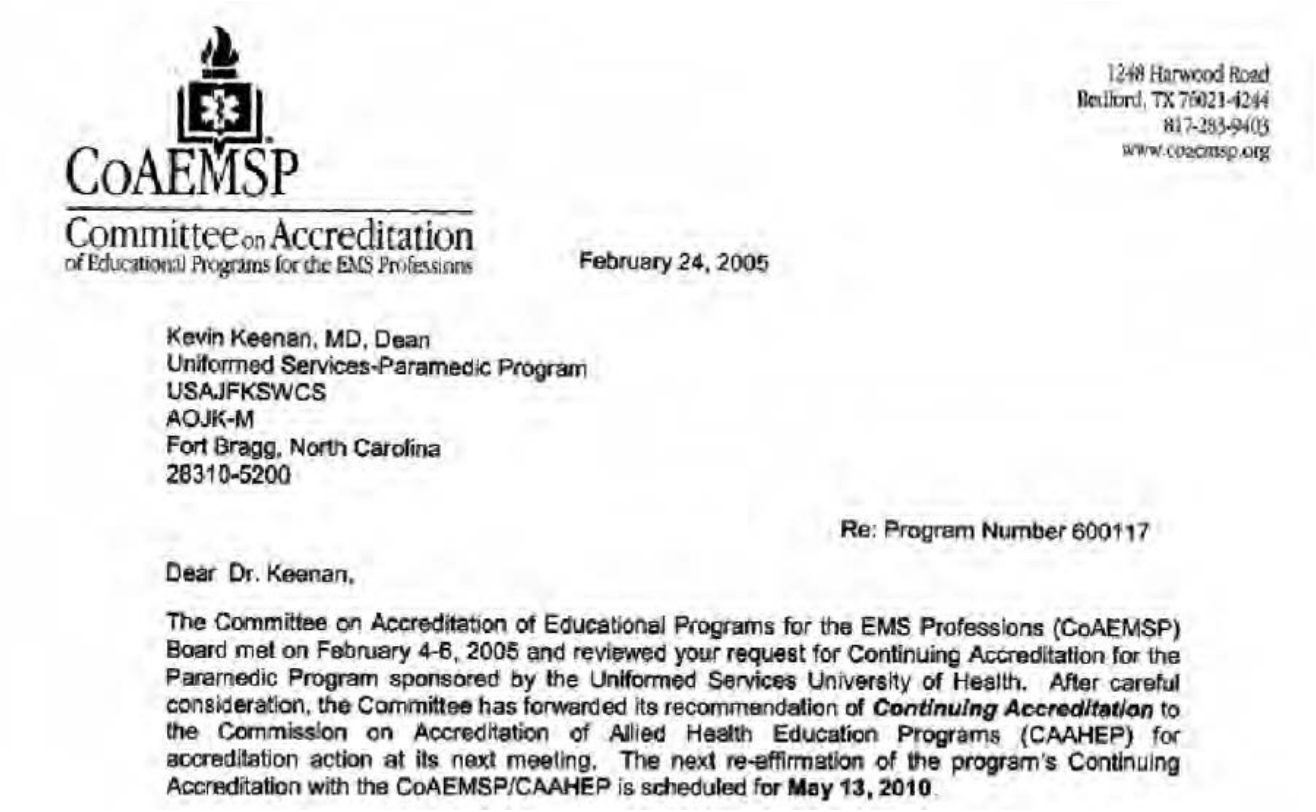
Whether because of increasing legal cases, the medical community closing ranks to police their own, or because of changes in technology, the medical communities, both civilian and military, have become more stringent about abiding by governing policies and ensuring that medical providers of all levels practice to some level of agreed upon standard. Standards are not only found in the medical arena, they can be found in almost every facet of industry and Service sector. "Certified" or "licensed" assures the consumer that services rendered will meet a certain standard. Who sets these standards and what does it really mean to be certified or licensed? By definition, "certified" means to guarantee, or attest as being true, or as represented, or as meeting a standard. A certificate or certification is typically awarded to an individual for showing his/her competency or proficiency as measured by the granting certification body. A license is permission to act, or a permission granted by competent authority to engage in a business or occupation or in an activity otherwise unlawful, and is usually regulated by state and federal authorities/statutes. There are agencies that give accreditation and those that grant certification. Agencies that grant accreditation usually do so to training institutions or programs of higher education. These accrediting organizations are recognized by either the Council for Higher Education Accreditation (CHEA) or by the United States Department of Education (USDE). Accreditation of an organization confirms the institution's compliance or quality to the accrediting body's prescribed academia. The level of competent authorities granting accreditation and certification varies among professions and often in itself is not regulated. For the most part these agencies are a group of "experts in their field." Some are self-appointed experts while others are well known pioneers in their fields. I found one certifying body consisted of only four individuals and others with over 50 members. Some certifying bodies are further endorsed by other professional bodies or organization. It is this endorsement that lends credibility to the certifying organization.

Included in this edition is an article from the CHEA on the Fundamentals of Accreditation, and extracts from the websites of the Commission on Accreditation of Allied Health Education Programs (CAAHEP), the Committee on Accreditation of Educational Programs for the EMS Profession (CoAEMSP), and the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC). JSOMTC's compliance with these three accrediting organizations' standards provides valuable training opportunities to our medics.

SOF has always recognized the value in cross-training and building redundancy in the capability for chances of mission success. Nowhere else is this more important than in providing medical care and medical cross-training. The Combat Life Saver (CLS) and the Tactical Combat Casualty Care (TCCC) programs are the two main programs for providing out-the-door medical training to both medics and non-medics. In addition, some units receive trauma refresher training by third party civilian organizations. Combat trauma training (CTT) has been offered by many different civilian organizations. Some of these civilian courses provide additional live-tissue training (LTT) that adds a valuable addition to training. However, in the past there has not been any effort on behalf of USSOCOM to standardize and regulate what training is, and is not, provided. The Commander's greatest concerns are that no SOF warrior is used in experiments, put in unnecessary harm, and that the training they receive is relevant and in compliance with USSOCOM policies and training guidance. In order to ensure conformity, the USSOCOM Surgeon's office has produced guidelines for CTT/LTT. LTT has always been a delicate issue with medical training. Before any SOF unit conducts LTT, they must have approved Institutional Animal Care and Use Committees (IACUC) protocols. The approving authority for IACUC protocols is the USASOC Surgeon's office.

Accreditation and certification is primarily in response to an increase in litigation in the civilian sector. The civilian sector is regulated by state and federal statutes. Prehospital care is governed under the Department of Transportation (DOT) guidelines and NREMT certification standards. The Department

of Defense (DOD) does not fall under the same constraints as DOT. Title 10 of the U.S. Code authorizes Commanders to identify their mission essential tasks and train their service members to accomplish the mission. There is no excuse for DOD healthcare to differ from that of civilian care in the continental United States. Therefore, many regulations found in civilian healthcare facilities are applicable in military facilities. Training of SOF combat medics who find themselves in austere environments in third world countries will require differing standards, and enhanced scopes of practice and technology to ensure that we sustain the force and maintain the philosophy that humans are more important than hardware. The USSOCOM Medic Certification Program is the present standard of the Command. Included in this supplement is the newest version of the USSOCOM Tactical Emergency Protocols (TMEPs) and associated TMEP drug list. It is vital that the preface is read and understood, that these protocols are for the SOF Advanced Tactical Practitioner (ATP) when operating in an austere environment where no other advanced medical care or advice is available. The TMEPs have been developed to limit the amount of medications a medic will have to carry. Not all the treatment protocols are the primary choices recommended in a garrison or where there is advanced medical care. Please consult your primary care provider/supervisor before deploying or administering a protocol in an environment that is not considered austere or where higher medical authority exists.



CoAEMSP
Committee on Accreditation
of Educational Programs for the EMS Professions

1248 Harwood Road
Bedford, TX 76021-4244
817-283-9403
www.coaemsp.org

February 24, 2005

Kevin Keenan, MD, Dean
Uniformed Services-Paramedic Program
USAJFKSWCS
AOJK-M
Fort Bragg, North Carolina
28310-5200

Re: Program Number 600117

Dear Dr. Keenan,

The Committee on Accreditation of Educational Programs for the EMS Professions (CoAEMSP) Board met on February 4-6, 2005 and reviewed your request for Continuing Accreditation for the Paramedic Program sponsored by the Uniformed Services University of Health. After careful consideration, the Committee has forwarded its recommendation of ***Continuing Accreditation*** to the Commission on Accreditation of Allied Health Education Programs (CAAHEP) for accreditation action at its next meeting. The next re-affirmation of the program's Continuing Accreditation with the CoAEMSP/CAAHEP is scheduled for **May 13, 2010**.

The Role of the United States Special Operations Command Department of Emergency Medical Services Requirements and Curriculum & Examination Boards

Rick Hammesfahr, MD, Chairman - CEB and Master Sergeant Samuel R. Rodriguez, 18D, Chairman - RB

In April of 2003, the United States Special Operations Command (USSOCOM) Surgeon's office established the USSOCOM Department of Emergency Medical Services (EMS) and Public Health as part of USSOCOM's United States Code, Title 10 responsibilities. This new department was established to promote a comprehensive and effective enlisted military healthcare certification program. Several attempts to adapt and adhere to strict civilian paramedic certifications failed to adequately prepare our Special Operation Medics or delineate the advanced combat medical scope of practice required for the Special Operations community. The Special Operations Forces Paramedic (SOF-P), or currently titled Advanced Tactical Practitioner (ATP), certification directly addresses the minimum medical scope of practice and protocol standards for the Special Operations core task:

- Synchronize GWOT
- Counterterrorism (CT)
- Counter proliferation of WMD (CP)
- Unconventional warfare (UW)
- Direct action (DA)
- Special reconnaissance (SR)
- Foreign internal defense (FID)
- Psychological Operations (PSYOP)
- Civil affairs Operations (CAO)
- Information operations (IO)

In the 1990s, during a time of relative peace and when the OPTEMPO was not as it is today, a civilian standard paramedic was a costly certification requirement that this Command found an acceptable cost for our medics. The cost was the amount of time and effort we used to train our medics to civilian standards, rich in pediatric and geriatric injuries common in the civilian pre-hospital setting. However, since the Gulf War, our leadership has questioned the feasibility and practicality of adhering to this civilian standard. Because of the different mission requirements (between the civilian and military), it was only natural that different certification requirements be developed to maintain the necessary certification for the enlisted military healthcare providers. The National Registry Emergency Medical Technician (NREMT) certification failed to recognize that SOF medics were consistently providing medical care in situations that fell outside and above the standard EMT training and certification parameters, were performing increasingly sophisticated invasive medical procedures, and were assuming greater responsibility for prolonged patient care in the global war on terrorism (GWOT).

As a result, the medical procedures being performed by the Special Operations Forces medic were not recognized as being within the skill set of the Emergency Medical Technician – Paramedic (EMT – P), and therefore were not technically certified or authorized by the NREMT - P certification. Minor surgery, prolonged nursing care, suturing techniques, and independent medical decision-making were out of the question in the civilian world under the NREMT–P certification, but were routinely being performed in areas of the world by SOF medics.

Despite the perceived military need for a new certification, the NREMT saw no civilian need to make changes or create a certification that addressed the differences between the requirements of the civilian sector and the requirements needed by SOF medics. Looking elsewhere for a certification process, there was not a single nationally or internationally recognized pre-hospital curriculum or certification that encompassed the knowledge base or psycho-motor skills needed to successfully satisfy USSOCOM enlisted operational medical requirements.

As a result, it became necessary to develop a new level of medical certification. The Special Operations Combat Medic (SOCM) Paramedic model must satisfy the SOF mission activities and patient populace within those parameters, rather than the overall United States general patient populace. This new level of certification had to ensure it fulfilled certain critical requirements:

- Ensure interoperability among all components SOF medics.
- Certify the high degree of medical techniques and advanced medical skills needed to care for a critically injured patient for 72 hours.
- Develop the legal basis and framework under which the new certification process could be implemented

and fully comply with outside scrutiny, inspection, and/or accreditation by educational agencies.
- Synchronize the curriculum and examination process to allow for the certification.

In accomplishing the goal of developing the Advanced Tactical Practitioner (ATP) certification, a step-wise process was necessary that lead to the establishment of a state-like agency (USSOCOM) that would assume responsibility for the Advanced Tactical Practitioner process.

A state-like agency is defined as "the federal or state government and any of its departments, agencies, or components (such as a city, county, or board)" (Hill & Hill's *The People's Law Dictionary* 2000). Furthermore, in discussions with the National Highway Traffic and Safety Administration in late 2000, the Senior EMS administrator (Mr. Jeff Michael), along with various legal department representatives of the National Highway Traffic and Safety Administration (NHTSA) stated:

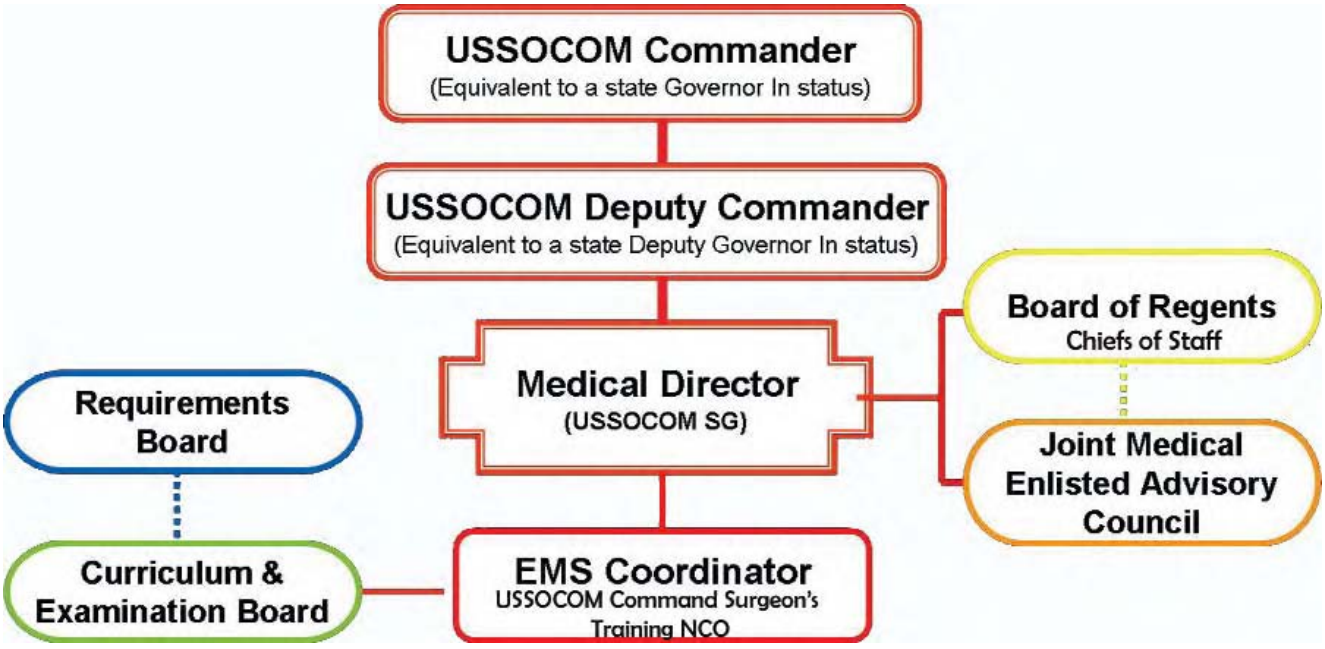
- They had no administrative oversight over USSOCOM or any of the big military services.
- They subsequently asserted that USSOCOM had the authority, just as any other state or provincial government, to establish their own medical scope of practice and credentialing processes for their medical assets.
    - *U.S. Special Operations Command Directive 40-2 (2004), -"Joint Special Operations Medical Training"*
    - *USSOCOM Chief of Staff Interim Message (18 Feb 03): "Memorandum, dated 27 03, Subject: Interim Guidance for SOF Emergency Medical Technician-Paramedic (SOF EMT-P)."*

Before developing the ATP certification, which would validate the higher knowledge base, skill set, and level of medical authority of the SOF medic, it was necessary to:

- Develop a departmental structure comprised of personnel within the USSOCOM Headquarters / Component Commands, volunteer healthcare providers, and educators from the conventional mil itary and civilian medical communities.
- Replicate "state and provincial" Bureaus of Emergency Medical Services business practices and medical credentialing processes.
- Establish a Requirements Board (RB), made of operational enlisted medical operators and physicians, to develop an educational needs assessment of what Joint SOF enlisted medical capabilities should encompass – similar to a mission essential task list or medical scope of practice.
- Develop a joint medical curriculum and state-like certification process through the employment of a Curriculum and Examination Board (CEB), comprised of professional healthcare providers and educators from various backgrounds and communities.

Once the legal basis for the concept of responsibility for military enlisted healthcare providers in the EMS setting had been established and accepted, it then became necessary to develop the implementation plan. Since this process had already been worked through by the individual civilian states, the Bureaus of Emergency Services ,and the National Highway Traffic and Safety Administration (NHTSA), the development process could be modified and then used by the military. The end result was to:

- Develop a comprehensive plan that trained SOF Medics to the Joint Mission Essential Task List (JMETL) while simultaneously maintaining accreditation of the JSOMTC with the Committee on Accreditation of Educational Programs for the Emergency Medical Services Profession (CoAEMSP).
- Define the role of the Board of Regents (BOR).
- Define the role of the Joint Medical Enlisted Advisory Council (JMEAC), as the professional quality assurance mechanism, to review force grievances, conduct administrative hearings, and set certification revocation dispositions.
- Establish a Requirements Board (RB) to develop an educational needs assessment of what the medical capabilities should encompass for the force to be interoperable while practicing sound medicine.
- Establish a societal/professional occupation "core" curriculum and certification process through the employment of a Curriculum and Examination Board (CEB).
- Establish a secure certification and continuing education database.
- Seek accreditation by the Accrediting Council for Continuing Education and Training (ACCET) of the USSOCOM state continuing education granting program recognized by the U.S. Department of Education.
- Develop an unclassified website for medical continuing education and medical reference to enhance the current sustainment program and reduce cost in resources.



The USSOCOM Department of the EMS consists of two certifying boards: the Requirements Board (RB) and the Curriculum & Examination Board (CEB).

- The USSOCOM Requirements Board is an embodiment of fifteen volunteer members whose role is to identify the minimal medical educational requirements based upon specific critical tasks, mission profiles, and operational requirements.
- The USSOCOM Curriculum & Examination Board is a committee of twenty-seven members, charged with identifying the minimal medical educational requirements based upon educational requirements developed by the Requirements Board (RB) and develop the cognitive externally promulgated examinations necessary for the certification process.

To date, the Requirements Board has developed the ATP Critical Task List (CTL) from over 1445 critical medical tasks. The USSOCOM Board of Regents comprised of the components Chiefs of Staff and the USSOCOM Commander has approved this list. It was then given to the Curriculum and Examination Board which:

- Developed the test bank of questions that would eventually become the basis for the Advanced Tactical Practitioner certification exam.
- Developed the testing process for this exam.
- Developed the review process for determining question validity.
- Developed terminal learning objectives and enabling learning objectives that would satisfy testing requirements for the knowledge required by the CTL. (However, development of the curriculum to be taught, and the manner in which it is taught, remains the reasonability of the Joint Special Operations Medical Training Center and Kirtland.)
- Developed a study guide for the Advanced Tactical Practitioner students for this certification test.
- Developed the administrative oversight process for the testing process.
- Developed the Tactical Emergency Protocols for a set of medical conditions that would further define independent medical care by the Advanced Tactical Practitioner.
- Provide a feedback mechanism.

The above goals have been accomplished. The Advanced Tactical Practitioner exams have been beta tested several times at JSOMTC and Kirtland. The analysis of the beta tests allowed for further refinement in the question development process, identification process of subject matter to be tested, and further refinement in the test administration process.

The Advanced Tactical Practitioner Certification process is currently being integrated at both JSOMTC and Kirtland. Analysis of the test results will allow for identification of subject matter areas that need additional teaching time. The question development process and subject matter process is an ongoing one. As medical technology changes, treatment approaches change, and as knowledge from "Lessons Learned" studies become available, the Advanced Tactical

Practitioner certification process will be adapted to reflect the updated knowledge and procedural changes. The certificate is valid for two years, and is then renewed after attending the Special Operations Combat Medic Sustainment Skills Course (SOCMSSC). The Committee on Accrediting Emergency Medical Services Programs (CoAEMSP) has reviewed the curriculum at the Joint Special Operations Medical Training Center (JSOMTC), and has re-certified that the JSOMTC is CoAEMSP compliant.

The Tactical Medical Emergency Protocols (TMEP) have been reviewed and modified by the Requirements Board. This update is due for publication in the near future. The TMEPs are currently being taught in the SOCM course and adopted throughout the component services.

In summary, the current process has allowed for the successful development of a certification process to ensure that medical training supports mission requirements while simultaneously ensuring quality standard-of-care that will meet any scrutiny in the differing of care rendered in a tactical environment as opposed to the civilian sector. The "state-like agency," (USSOCOM-SG) with overall certification and licensing responsibility, has allowed for the establishment of a quasi-independent board process for the purpose of ATP certification. This has resulted in the successful development of a certification process that recognizes the advanced clinical skills and knowledge required by the SOF medic, satisfying the joint interoperable medical standard mandate of suitable certification of military healthcare providers, that allows for uniform education of the SOCMS level medic across the service lines, ensuring force interoperability.

None of this would have been possible without the concerted effort of a large number of people. General Brown and the USSOCOM-SG (COL Hammer, CAPT Butler, and COL Farr) have been deeply involved and supportive of this project from the beginning. MSgt McCumsey was responsible for the initial development of the concepts and the program. The members of the RB and CEB, who have volunteered countless hours in designing this program both past and present, are:

USSOCOM Requirements Board

MAJ Barber (Original Board Chairman)
MSG Rodriguez (Current Board Chairman)
LTC Lutz
MAJ Wheeler
LT Bestachio
MSgt Krenzke
MSgt Donovan
SSG Williamson
MSG Sechrest
HMCM Mercer
MSG Lamoreaux
HM1 Fiske
HM1 Fletcher
SFC Odom
CPT Bruno
HMCS Sine
LT Ricks

USSOCOM Curriculum & Examination Board

Bill Bograkos, MD (Original Board Chairman)
Rick Hammesfahr, MD (Current Board Chairman)
Charles Beadling, MD
Brian Bledsoe, MD
Brian Burlingame, MD
MSG Mike Chesney
SFC Guy Clark
SFC Ricardo Flores
MSG Barry Fraser
Gary Gerraci, DDS
Bob Hesse, RN
Matt Hickey, MD
Troy Johnson, MD
SMSgt Brian Kearney
Gary Latson, MD
Joe Legan, MD
SOCS (SEAL) Rich Moore
Dan Mosely, MD
Robert Mott, MD
Eleanor O'Rangers, PhD
Andy Pennardt, MD
John Powell, MD
Dan Schissel, MD
John Todaro, RN

History of the NREMT

It has been nearly four decades since President Lyndon Johnson's Committee on Highway Traffic Safety recommended the creation of a national certification agency to establish uniform standards for training and examination of personnel active in the delivery of emergency ambulance service. The result of this recommendation was the inception of the National Registry of Emergency Medical Technicians (NREMT) in 1970.

Since that time, pre-hospital emergency medical care has continually evolved and improved. The EMT has been acknowledged as a bonafide member of the healthcare team. Excellent training programs have been developed and a vital focus has been placed on continuing education. National standards have been established. Ambulance equipment essentials have been set. National accreditation of paramedic programs has been achieved, and professional associations for the EMT have been organized.

Through every change, the NREMT has remained steadfast in upholding its mission to provide a valid uniform process to assess the knowledge and skills required for competent practice required by professionals throughout their careers and by maintaining a registry of certification status.

The organization has done what was necessary to establish, implement, and maintain uniform requirements for the certification and recertification of emergency medical technicians. The NREMT has also been involved in numerous national projects and its staff participates on major national committees, playing an active part in the ever-continuing process of improving standards of emergency medical services.

1969

President Lyndon Johnson's Committee on Highway Traffic Safety recommends the creation of a national certification agency to establish uniform standards for training and examination of personnel active in the delivery of emergency ambulance service. This resulted in the appointment of a Task Force by the American Medical Association's Commission on EMS to study the feasibility of a National Registry for EMTs. The Task Force was headed by Oscar P. Hampton, Jr., MD, a physician recognized for his pioneering work with the American College of Surgeons' Committee on Trauma.

1970

Representatives of organizations actively involved in emergency medical service attended the first meeting of the Task Force on January 21, 1970. Organizations invited to participate were:

- Ambulance Association of America
- International Association of Fire Chiefs
- International Rescue and First Aid Association
- National Ambulance and Medical Services Association
- National Forest Service
- National Funeral Directors Association
- National Park Service
- National Safety Council
- National Ski Patrol
- American Heart Association
- International Association of Chiefs of Police

The Task Force met only three times to draft bylaws, determine the composition of the Board, discuss funding, and tackle a myriad of other concerns inherent in the birth of the new certifying agency.

On June 4, 1970, the Task Force was dissolved and was immediately reconvened as the first meeting of the Board of Directors of the National Registry of Emergency Medical Technicians. Roddy A. Brandes of the Ambulance Association of America was elected the Board's first Chairman.

1971

Rocco V. Morando was selected as NREMT's founding Executive Director.

The first basic NREMT-Ambulance exam is administered simultaneously to 1,520 ambulance personnel at 51 test sites throughout the U.S. This event marked the beginning of National Board Certification for the nation's Emergency Medical Technicians.

1973

The first recertification of a Nationally Registered EMT is processed.

1974

The NREMT calls a meeting of national EMT-Paramedic leaders and educators to develop initial guidelines for the national EMT-Paramedic curriculum.

1975

Continuing education requirements for re-registration are established for EMT-Ambulance and EMT-Non Ambulance personnel.

The NREMT is instrumental in the formation of the National Association of Emergency Medical Technicians.

A brief prepared by the NREMT was reviewed and accepted by the American Medical Association's Committee on Health Manpower, resulting in the addition of EMT-Paramedic to the list of approved health occupations and the subsequent Council of Allied Health Education and Accreditation (C.A.H.E.A.) procedure.

1976-1977

The NREMT contracted with the University of Kansas to develop and pilot test written and practical examinations for the EMT-Paramedic.

National curriculum for paramedic training was developed in conjunction with leading EMS agencies and the University of Pittsburgh.

A multi-media, audiovisual teaching package was produced by the NREMT to train examiners in the administration of an objective practical performance examination for the EMT-Ambulance.

1978

The First NREMT-Paramedic exam was given in Minneapolis, MN.

The Registry became a member of the National Commission for Health Certifying Agencies.

1979

Continuing education requirements for re-registration were established for EMT-Paramedics.

As a member of the C.A.H.E.A. Joint Review Committee, the Registry helped to develop essentials and guidelines for the accreditation of educational training sites for the EMT-Paramedic.

1980

Guidelines and examination for the EMT-Intermediate were developed.

The NREMT broke ground on a new headquarters at 6610 Busch Boulevard in Columbus, Ohio, to house the growing organization.

The first NREMT-Intermediate exam was given in Jackson, Mississippi.

1981

The NREMT's new headquarters was dedicated on June 23.

1982

For the first time, two versions of the EMT-Ambulance exam were introduced, reducing the possibility of exam compromise.

1983

Free-standing EMT-Intermediate written and practical examinations are developed and implemented.

1984

The NREMT exams are now used by 24 states and territories as the sole basis for certification at one or more levels. An additional 15 states and territories accept NREMT exams in lieu of their state examinations, at one or more levels.

The NREMT became an active participant in a research project conducted by the National Council of State EMS Training Coordinators to collect data and determine the need for standards and guidelines for the EMT-Defibrillator level of care.

1986

The NREMT incorporated all new standards of the American Heart Association into the examinations at all three levels of certification.

Preliminary talks on feasibility of consolidating all enlisted SOF medical training at Fort Bragg, North Carolina took place. The U.S. Department of Defense develops and disseminates Directive No. 6000.10 on Emergency Medical Services which states, "All EMS healthcare personnel working in an emergency care area shall have current certification in Basic Life Support. Technicians or hospital corpsman working in EMS and/or assigned to ambulance duty shall have a minimum of EMT-A certification from the National Registry of EMTs."

1987

The NREMT adopted the examination blueprint changes to meet the newly released National Standard EMT-Intermediate and EMT-Paramedic Curricula as developed and promulgated by the U.S. Department of Transportation.

The NREMT begins to include appropriate questions related to felony convictions on all applications for initial certification and recertification.

New examinations were written and used at the EMT-Intermediate level according to the U.S. Department of Transportation's EMT-Intermediate curriculum.

The Joint Special Operations School Integration Committee (JSOIC) recommended that a joint educational institute for SOF enlisted forces be developed. It was believed this would provide an integrated ideology, reduce training operational costs, and standardize educational curriculum and medical scopes of practice, further creating an enhanced interoperability and capability among the three military services.

1988

NREMT Executive Director Rocco V. Morando retired but continued his service as Executive Consultant to the Board of Directors.

The NREMT headquarter building was renamed the Rocco V. Morando Building.

The NREMT accepted its 300,000th EMT-Ambulance application.

1989

William E. Brown, Jr., RN, MS, CEN, NREMT-P assumes the position of Executive Director.

All branches of the U.S. military began to comply with the Department of Defense Directive requiring National Registration for EMTs in the military.

A new category, EMT-Basic, is established, combining EMT-Ambulance and EMT-Non-Ambulance.

The National Association of State Emergency Medical Services Directors replaces the International Association of Chiefs of Police on the Board of Directors.

1991

The NREMT participated in the revision of the U.S. Department of Transportation's EMT-Basic curriculum.

In 1991, the Commander, USSOCOM, solicited for monetary resources to create an institution for all the Special Operations healthcare providers. The institution was designated as the United States Army Institute for Special Operations Medical Training (USAISOMT). Two years later Congress allocated $17.5 million dollars for the construction of the institutions learning center and co-located student billeting.

1992

The NREMT implemented a scientifically developed policy to accommodate candidates with learning disabilities in accordance with the Americans with Disabilities Act.

The Board of Directors approved funding for a National EMT Training Blueprint project and study design for a knowledge and skills retention study.

1993

The NREMT endorsed the EMS Education and Practice Blueprint.

The NREMT voted to support the Commission on Accreditation of Allied Health Education Programs, which replaced the American Medical Associations Committee on Allied Health Accreditation as the sponsoring body for accreditation.

1995

The NREMT conducts a practice analysis study to determine key areas required for practice. All exams are updated based on the data obtained from this study.

1996

The NREMT installed a new computer system which improves communications with state offices

The NREMT begins registration of First Responders.

The NREMT works with the Center for Emergency Medicine of Western Pennsylvania on revision of the EMT-Intermediate and EMT-Paramedic curricula.

Final construction was completed in May 1996 at a final cost of $27 million. The facility was renamed the Joint Special Operations Medical Training Center (JSOMTC).

1998

The NREMT Board approved formation of the Longitudinal EMT Attribute Demographic Study (LEADS) project committee to learn more about the important issues facing EMS personnel and to help identify the critical issues affecting the profession.

1999

The NREMT Mission Statement was adopted:

To certify and register Emergency Medical Services Professionals throughout their careers by a valid and uniform process to assess the knowledge and skills for competent practice.

The NREMT adopted the EMT-Intermediate/99 level and retained Registry certification of the EMT-Intermediate/85 until completion of the EMS Education Agenda for the Future process had been completed.

The LEADS committee completes first survey and snapshot on EMS education.

2000

The Board of Directors adopted a Strategic Plan to help guide the direction of the organization.

The LEADS committee completed second survey and snapshot on EMS work life.

2001

The NREMT exams were now used by 43 states and territories as the sole basis for certification at one or more levels.

The LEADS committee completed its third survey and snapshot on EMS compensation.

2002

The NREMT increases fees for the first time since 1973.

The LEADS committee completed its fourth survey and snapshot on EMS driving safety and health risk.

USSOCOM formally requested NREMT to make a NREMT-M (Military) Certification category. NREMT denies request.

2003

The NREMT implemented a research program for the betterment of NREMT programs and to contribute to the EMS community.

The NREMT received accreditation of all five levels of exams from the National Commission for Certifying Agencies, a certification accrediting agency sponsored by the National Organization for Competency Assurance.

The LEADS committee completed its fifth survey and a post 9/11 survey.

USSOCOM implemented a three year interim policy for medical certification: Special Operations Combat Medic or NREMT trained.

2004

The LEADS committee completed its sixth survey and snapshot on ambulance safety.

2005

The NREMT exams were now used by 46 states and territories as the sole basis for certification at one or more levels. MA, NC, NY, and UT keep state certification.

The NREMT began the process to transition from pencil-and-paper based exams to computer based testing in January 2007.

2006

USSOCOM suspends Interim Policy Letter. New Policy (USSOCOM 40-2) states SOF Medics will be trained by JMETL; further designated as Advanced Tactical Practitioner (ATPs).

COUNCIL FOR HIGHER EDUCATION ACCREDITATION
FACT SHEET #1
Profile of Accreditation
April 2006

"ACCREDITATION" is a process of external quality review used by higher education to scrutinize colleges, universities, and educational programs for quality assurance and quality improvement. In the United States, accreditation is carried out by private, non-profit organizations designed for this specific purpose.

Institutions and educational programs seek accredited status as a means of demonstrating their academic quality to students and the public and to become eligible for federal funds.

Numbers of Accredited Institutions and Programs

• 6,814 institutions are accredited • 18,152 programs are accredited[1]

These institutions and programs are accredited by organizations recognized either by the Council for Higher Education Accreditation (CHEA) or by organizations recognized by the United States Department of Education (USDE). CHEA or USDE "recognition" is a review of the quality and effectiveness of accrediting organizations based on the respective standards of CHEA or USDE.

Of the 6,814 institutions:
6,383 accredited institutions participated in the federal Title IV (Student Assistance) Program in 2004 - 2005. 3,902 of these institutions are nonprofit and 2,481 are for-profit. 504 foreign institutions are Title IV-eligible.[2] If an institution participates in Title IV, students have the opportunity to apply for federal grants and loans to finance their education.

- 4,242 (62.3%) are degree-granting (associate degree and above)[1]
- 2,572 (37.7%) are non-degree-granting[1]
- 3,678 (54%) are nonprofit[1]
- 3,136 (46%) are for-profit[1]

Types and Numbers of Recognized Accreditors

Types of Accreditors

Institutional

- *Regional*: Regional accreditors operate in six specific clusters of states (regions) in the United States and review entire institutions, 97 percent or more of which are both degree-granting and nonprofit. There are 2,986 regionally accredited institutions.
- *Faith-Based*: Faith-based accreditors operate nationally and review religiously-affiliated or doctrinally-based institutions, 100 percent of which are degree-granting and non-profit. There are 412 faith-based accredited institutions.
- *Private Career:* Private career accreditors operate throughout the country and review entire institutions, 24.9 percent of which are degree-granting and 75 percent are non-degree-granting; 10.6 percent are non-profit and 89.3 percent are for-profit. There are 3,416 private career institutions. Many are single-purpose institutions focusing on, e.g., education in business and information technology.
- *Programmatic* or *Specialized*: Programmatic specialized accreditors operate throughout the country and review programs and some single-purpose institutions.

In April 2005:

- 60 accreditors were recognized by CHEA.
- 61 accreditors were recognized by USDE.
- 38 of these accreditors were both USDE- and CHEA-recognized.[3]

Purposes of Accreditation

Accreditation serves the following purposes:

- *Assuring Quality*. Accreditation is the primary means by which colleges, universities, and programs assure academic quality to students and the public.
- *Access to Federal Funds*. Accreditation of institutions and programs is required in order for students to gain access to federal funds such as student grants and loans and other federal support.
- *Easing Transfer*. Accreditation of institutions and programs is important to students for smooth transfer of courses and programs among colleges and universities.
- *Engendering Private Sector Confidence.* Accredited status of an institution or program is important to employers when evaluating credentials of job applicants and providing financial support to current employees seeking additional education. It is taken into account by corporations, foundations, and individuals making private donations to higher education.

Recognition Purposes and Standards[4]

CHEA and USDE each review the quality and effectiveness of accrediting organizations:

- CHEA's primary purpose is to assure and strengthen academic quality and ongoing quality improvement in courses, programs, and degrees. CHEA's recognition is based on five standards that include, e.g., advancing academic quality and encouraging needed improvement.
- USDE's primary purpose is to assure that federal student aid funds are purchasing quality courses and programs. USDE's recognition is based on 10 standards that include attention to, e.g., recruitment and admission practices, fiscal, and administrative capacity and facilities.

CHEA Recognition Standards

This language illustrates the recognition standards and is not the full or official CHEA policy statement. Please consult the 2006 CHEA *Recognition Policy and Procedures* at www.chea.org for the formal policy language that is used in CHEA recognition reviews. The CHEA recognition policy was adopted by the board of directors in September 1998 and revised in January 2006.

- *Advance academic quality.* Accreditors have a clear description of academic quality and clear expectations that the institutions or programs they accredit have processes to determine whether quality standards are being met.
- *Demonstrate accountability.* Accreditors have standards that call for institutions and programs to provide consistent, reliable information about academic quality and student achievement to foster continuing public confidence and investment.
- *Encourage, where appropriate, self scrutiny and planning for change and needed improvement.* Accreditors encourage self scrutiny for change and needed improvement through ongoing self-examination in institutions and programs.
- *Employ appropriate and fair procedures in decision making.* Accreditors maintain appropriate and fair organizational policies and procedures that include effective checks and balances.
- *Demonstrate ongoing review of accreditation practice.* Accreditors undertake self scrutiny of their accrediting activities.
- *Possess sufficient resources.* Accreditors have and maintain predictable and stable resources.

USDE Recognition Standards

Required Standards and their Application (as of July 1, 2000)[5]

602.16 Accreditation and preaccreditation standards.

(a) The agency must demonstrate that it has standards for accreditation, and preaccreditation, if offered, that are sufficiently rigorous to ensure that the agency is a reliable authority regarding the quality of the education or training provided by the institutions or programs it accredits. The agency meets this requirement if –

(1) The agency's accreditation standards effectively address the quality of the institution or program in the following areas:

(i) Success with respect to student achievement in relation to the institution's mission, including as appropriate, consideration of course completion, state licensing examination, and job placement rates.
(ii) Curricula.
(iii) Faculty.
(iv) Facilities, equipment, and supplies.
(v) Fiscal and administrative capacity as appropriate to the specified scale of operations.
(vi) Student support services.
(vii) Recruiting and admissions practices, academic calendars, catalogs, publications grading, and advertising.
(viii) Measures of program length and the objectives of the degrees or credentials offered.
(ix) Record of student complaints received by, or available to, the agency.
(x) Record of compliance with the institution's program responsibilities under Title IV of the Act, based on the most recent student loan default rate data provided by the Secretary, the results of financial or compliance audits, program reviews, and any other information that the Secretary may provide to the agency.

The April 2006 *Profile of Accreditation* (Fact Sheet #1) updates and expands the August 2003 Fact Sheet #1.

A national advocate and institutional voice for self-regulation of academic quality through accreditation, CHEA is an association of 3,000 degree-granting colleges and universities and recognizes 60 institutional and programmatic accrediting organizations.

1. CHEA *Almanac of External Quality Review 2005*.
2. USDE, Office of Federal Student Aid, 2006.
3. *CHEA Almanac of External Quality Review 2005.*
4. Visit the CHEA Website at www.chea.org for additional information about the CHEA recognition standards and a list of CHEA accreditors. Visit the USDE Website at www.ed.gov/offices/OPE/accreditation/ for additional information about the USDE recognition standards and a list of recognized accreditors.
5. Source: *Current List of Nationally Recognized Agencies and State Agencies Recognized for the Approval of Public Postsecondary Vocational Education and Nurse Education and the Criteria for Recognition by the U.S. Secretary of Education*. USDE, Office of Postsecondary Education, June 2000.

CHEA®
Council for Higher Education Accreditation
One Dupont Circle NW • Suite 510
Washington DC 20036-1135
tel: 202-955-6126 • fax: 202-955-6129
e-mail: chea@chea.org • *www.chea.org*

COUNCIL FOR HIGHER EDUCATION ACCREDITATION

FACT SHEET #5

Accrediting Organizations in the United States: How Do They Operate to Assure Quality?

April 2006

Accreditation is the primary means by which the quality of higher education institutions and programs is assured in the United States. Accreditation is a form of self-regulation in which colleges, universities, and programs have come together to develop standards, policies, and procedures for self-examination and judgment by peers. In 2005, approximately 7,000 institutions and 18,000 programs held accredited status.

Accreditation is carried out through private, nonprofit organizations. Some review entire institutions (regional, faith-based, and private career accreditors) and others review programs such as law, medicine, or business (programmatic accreditors). These organizations undertake this responsibility in quite similar ways, each requiring a self-study by the institution or program under review, a review by peers (including a site visit in most cases), and a judgment about accredited status. These judgments are based on standards of quality developed by the accrediting organization in consultation with the higher education community.

Approximately 80 accrediting organizations in the United States are themselves reviewed for quality. They routinely undergo scrutiny (a process called "recognition") either by the Council for Higher Education Accreditation (CHEA) or by the federal government through the United States Department of Education (USDE) or both. A complete list of CHEA - and USDE-recognized accrediting organizations may be found on the CHEA Website at www.chea.org under "Databases and Directories."

Accrediting organizations make information available to the public primarily through print documents and Websites. In addition to these documents and Websites, lists of accrediting organizations may be found on the CHEA Website, the USDE Website at http://www.ed.gov/admins/finaid/accred/index.html and the Association of Specialized and Professional Accreditors (ASPA) Website at www.aspa-usa.org.

The locations indicated above and the Websites of individual accrediting organizations provide answers to four important questions:

- What institutions and programs are accredited?
- What are the standards and policies used by these organizations to make judgments about the quality of an institution or program?
- What additional information about institutions, programs or accrediting organizations is available?
- How are accrediting organizations structured, financed, staffed and governed?

What Institutions and Programs are Accredited*?*

Accrediting organizations routinely answer this question by:

- Maintaining an updated list of the institutions and programs that are accredited;
- Describing the length of time of an accreditation of an institution or program;
- Providing information about whether an accredited institution or program is under any sanctions and a description of these sanctions;
- Maintaining a summary of recent actions taken by accrediting organizations, usually provided aftermeetings of decision-making bodies; and
- For some organizations, offering aggregate data or profiles of the institutions or programs that are accredited.

What are the Standards and Policies Used by These Organizations to Make Judgments About Quality?

The requirements for accreditation may be found in the standards and policies of accrediting organizations.

Standards

- While each accrediting organization establishes its own standards by which institutions and programs are accredited, these standards all address similar areas, such as expected student achievement, curriculum, faculty, services and academic support for students and financial capacity.
- Standards are developed or changed through a process of public consultation involving, e.g., faculty, administrators, students, practitioners in specific fields, governing boards and members of the public. This process often involves an invitation to the public through, e.g., newspapers or general mailings.

Policies

- Each accrediting organization lays out a framework of expectations and practices that govern the conduct of accreditation review. These policies may include areas such as conflict of interest and release of information.
- Accrediting organizations also provide opportunities to express disagreement with or concern about their decisions or the actions of the institutions or programs they accredit. Examples include:
    - *Appeals:* Accrediting organizations have mechanisms by which an institution or program that is dissatisfied with a review may express its dissatisfaction and seek redress.
    - *Complaints:* Accrediting organizations describe the terms and conditions under which a complaint can be lodged against an institution or program that is accredited.
- Policies are developed or changed through a process of public consultation similar to that which is used for development or changes in accreditation standards.

What Additional Information do Accrediting Organizations Make Available?

- Under certain circumstances, and with permission from institutions or programs, self-study reports, and team visit reports offering description and analysis of institutions and programs that are reviewed;
- Dates of upcoming accreditation visits;
- Members of an organization's accrediting decision-making body;
- Staff members of accrediting organizations;
- Finances of accrediting organizations;
- Peer evaluators: the volunteers who work with the accrediting organization and carry out accreditation review.

How do Accrediting Organizations Operate?

- *Organization.* Accrediting organizations are private, nonprofit bodies legally incorporated to carry out accreditation activity or they are subsidiaries of other private, nonprofit organizations. Each accrediting organization has bylaws or a constitution that describes the legal framework for its operation.
- *Staffing.* Full- and part-time paid staff members are employed by the organization to carry out day-to-day activities, including coordination of accreditation reviews, meetings, conferences, and publications.
- *Accreditation Review.*
    - *Self-study*. Institutions or programs seeking accreditation typically prepare a self-study—an examination of whether their operation meets the standards of the accrediting organization.
    - *Team Visit and Report.* Higher education faculty and administrators, practitioners in specific fields and members of the public make up "teams" that visit an institution or program to determine whether or not the standards of the accrediting organization are being met.
- *Accreditation Decision-Making and Governance.* Higher education faculty and administrators,practitioners in specific fields and members of the public are elected or appointed to an accreditation decision-making body. This body determines whether or not an institution receives accreditation. This body also functions as the governing entity for the organization under its bylaws or constitution.
- *Funding.* The accrediting organization receives its funding from annual dues of its members, support from sponsoring associations, fees paid by institutions or programs for an accreditation visit, conferences and meetings, and in some instances, grants from external sources.

+++++++

The April 2006 Accrediting Organizations in the United States: How Do They Operate to Assure Quality? (Fact Sheet #5) updates and expands the May 2003 Fact Sheet #5.

A national advocate and institutional voice for self-regulation of academic quality through accreditation, CHEA is an association of 3,000 degree-granting colleges and universities and recognizes 60 institutional and programmatic accrediting organizations.

CHEA®
Council for Higher Education Accreditation
One Dupont Circle NW • Suite 510
Washington DC 20036-1135tel: 202-955-6126 • fax: 02-955-6129
e-mail: chea@chea.org • *www.chea.org*

What is CAAHEP?

"CAAHEP is the largest specialized accreditor of allied health education programs in the United States, representing 19 professions. The Committees on Accreditation (CoA) represent the actual profession and are CAAHEP's experts in evaluating and working with programs."

CAAHEP is recognized by the Council for Higher Education Accreditation

What is Accreditation … and Why is it Important?

Accreditation is an effort to assess the quality of institutions, programs and services, measuring them against agreed-upon standards and thereby assuring that they meet those standards.

In the case of post-secondary education and training, there are two kinds of accreditation: institutional and programmatic (or specialized).

Institutional accreditation helps to assure potential students that a school is a sound institution and has met certain minimum standards in terms of administration, resources, faculty, and facilities.

Programmatic (or specialized) accreditation examines specific schools or programs within an educational institution (e.g., the law school, the medical school, the nursing program). The standards by which these programs are measured have generally been developed by the professionals involved in each discipline and are intended to reflect what a person needs to know and be able to do to function successfully within that profession.

Accreditation in the health-related disciplines also serves a very important public interest. Along with certification and licensure, accreditation is a tool intended to help assure a well-prepared and qualified workforce providing healthcare services.

Information obtained from http://www.caahep.org/
Permission to publish in JSOM granted.

Core Values. As an organization, we hold most dearly to the following values, concepts, and ideals: The importance of a credible, peer review, educational program accreditation process that improves the quality of EMS care through education…The importance of maintaining a mentoring and consultative relationship, as well as serving an evaluative role, with programs seeking accreditation…Continually improving the quality of our services…Meeting the needs of our diverse communities of interest…Recognizing the importance of academic freedom, institutional autonomy, and innovation…Advancing and enhancing the EMS profession, and Maintaining high staff and volunteer satisfaction and morale.
Vision. The CoAEMSP will be the single, comprehensive National EMS education accreditation agency, as defined in the EMS Education Agenda for the Future.
Mission. The mission of the CoAEMSP, under the auspices of CAAHEP, is to continuously improve the quality of EMS education through accreditation and recognition services for the full range of EMS professions.

What is Accreditation...and Why is it Important?
Accreditation is an effort to assess the quality of institutions, programs and services, measuring them against agreed-upon standards and thereby assuring that they meet those standards.

In the case of post-secondary education and training, there are two kinds of accreditation: institutional and programmatic (or specialized).

Institutional accreditation helps to assure potential students that a school is a sound institution and has met certain minimum standards in terms of administration, resources, faculty, and facilities.

Programmatic (or specialized) accreditation examines specific schools or programs within an educational institution (e.g., the law school, the medical school, the nursing program). The standards by which these programs are measured have generally been developed by the professionals involved in each discipline and are intended to reflect what a person needs to know and be able to do to function successfully within that profession.

Accreditation in the health-related disciplines also serves a very important public interest. Along with certification and licensure, accreditation is a tool intended to help assure a well-prepared and qualified workforce providing health care services.

Why is CAAHEP and not the Committee on Accreditation the accreditor?
The simplest answer is that your committee is a member of CAAHEP for the purpose of having a nationally recognized organization accredit the profession that your committee represents. CAAHEP provides legal liability coverage to your committee and assures oversight and due process to all programs that participate in the CAAHEP system of accreditation. As such CAAHEP is responsible for handling all appeals that are a result of a committee's recommendation and the: CAAHEP Board of Directors subsequent action. CAAHEP is the accreditation expert while your committee is the profession's expert.

How Does an Educational Program Become CAAHEP-Accredited?
While there are some differences among the 18 professions within CAAHEP, all accredited programs must go through a rigorous process that has certain elements in common:
1. **Self-Study** - the program does its own analysis of how well it measures up to the established Standards.

2. **On-Site Evaluation** - a team of "site visitors" travels to the institution to determine how accurately the self study reflects the status of the program and to answer any additional questions that arise. This is a "peer review" process and often, after the formal part of the site visit is concluded, team members will share ideas for how a program can be strengthened or improved.
3.**Committee Review and Recommendation** - the CoA for the specific discipline will review the report from the site visitors and develop a recommendation. If there are areas where the program fails to meet the Standards, these "deficiencies" will be identified and progress reports will be requested to assure that each program continues its efforts to fully comply with all Standards.
4. **CAAHEP Board of Directors** - the CAAHEP Board of Directors will then act upon the recommendations forwarded from each CoA, assuring that due process has been met and that Standards are being applied consistently and equitably.

Length of Accreditation Awards
With the exception of Initial Accreditation, which is for a period of three years, an award of CAAHEP accreditation is not time-limited. When a CoA recommends that a program be accredited, they also recommend when the next comprehensive evaluation should take place. While each Committee establishes its own intervals (three years, five years, seven years, etc.), the maximum interval between comprehensive reviews is ten years. A Committee may also request a progress report or schedule a special, limited (focused) site visit if a program has serious problems that need to be addressed.

Why do both CAAHEP and our committee vote to grant programs accreditation?
Only CAAHEP grants accreditation. The committee is voting to forward a recommendation of initial, continuing, transfer of sponsorship, probation, withhold or withdrawal of accreditation to the CAAHEP

"Standards and Guidelines for the Accreditation of Educaional Programs in the Emergency Medical Services Professions"

updated 03/10/05

"EMS Standards & Guidelines 2005"
Essentials/Standards initially adopted in l978;
revised in 1989, 1999, and 2005

Adopted by the

American Academy of Pediatrics
American College of Cardiology
American College of Emergency Physicians
American College of Osteopathic Emergency Physicians
American College of Surgeons
American Society of Anesthesiologists
Commission on Accreditation of Allied Health Education Programs
National Association of Emergency Medical Services Educators
National Association of Emergency Medical Technicians
National Association of State Emergency Medical Services Directors
National Registry of Emergency Medical Technicians

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).

These accreditation Standards are the minimum standards of quality used in accrediting programs that prepare individuals to enter the Emergency Medical Services Professions. The accreditation Standards therefore constitute the minimum requirements to which an accredited program is held accountable.

Information obtained from http://www.coaemsp.org/index.html
Permission to publish in JSOM granted.

What is AAALAC?
AAALAC International is a private, nonprofit organization that promotes the humane treatment of animals in science through voluntary accreditation and assessment programs. AAALAC stands for the "Association for Assessment and Accreditation of Laboratory Animal Care."
More than 700 companies, universities, hospitals, government agencies, and other research institutions in 28 countries have earned AAALAC accreditation, demonstrating their commitment to responsible animal care and use. These institutions volunteer to participate in AAALAC's program, in addition to complying with the local, state, and federal laws that regulate animal research.
Some of the institutions that have earned AAALAC accreditation include the Sloan-Kettering Cancer Center, St. Jude Children's Research Hospital, The American Red Cross, and the National Institutes of Health.

Why is AAALAC's role important?
For some, animal research is a controversial topic. But like others in the animal welfare arena, AAALAC endorses the use of animals to advance medicine and science when there are no non-animal alternatives, and when it is done in an ethical and humane way.
When animals are used, AAALAC works with institutions and researchers to serve as a bridge between progress and animal well-being. This is done through AAALAC's voluntary accreditation process in which research programs demonstrate that they meet the minimum standards required by law, and are also going the extra step to achieve excellence in animal care and use.
In this way, AAALAC International is where science and responsible animal care connect.

What is a Program Status Evaluation?
The PSE is a completely confidential peer review that helps assess the quality of all aspects of your animal research program, including animal husbandry, veterinary care, institutional policies, and the facilities where animals are housed and used.
Because good science demands quality animal care, the evaluation will not only promote the well-being of laboratory animals, it will help validate the results of research using animals. It can also serve as the first step toward achieving AAALAC Accreditation, a distinction earned by hundreds of institutions that have achieved excellence in animal care and use.

Why does AAALAC offer Program Status Evaluations?
The decision to offer assessment services (in addition to the accreditation program) was prompted by a number of requests from non-accredited institutions for a "pre-AAALAC" site visit. These institutions, particularly those outside of the United States, are typically less familiar with the accreditation process and want to find out how their programs compare to AAALAC standards—before they participate in the formal accreditation program. AAALAC is pleased to accommodate these requests through its "Program Status Evaluation" (PSE) service.
The objective of the PSE service is twofold. First, it's meant to assist institutions in determining if their animal care and use programs meet AAALAC standards by identifying weaknesses and suggesting ways to improve or correct them. Second, it's meant to familiarize institutions with the AAALAC accreditation process and encourage them to participate.

U.S. SPECIAL OPERATIONS COMMAND

TACTICAL MEDICAL EMERGENCY PROTOCOLS

For SPECIAL OPERATIONS ADVANCED TACTICAL PRACTITIONERS (ATPs)

December 04, 2006

USSOCOM OFFICE OF THE COMMAND SURGEON
DEPARTMENT OF EMERGENCY MEDICAL SERVICES AND PUBLIC HEALTH
7701 Tampa Point Boulevard
MacDill Air Force Base, FL 33621
(813) 826-5065

PREFACE

Management of medical emergencies is best accomplished by appropriately trained physicians in an Emergency Department setting. Special Operations combat medics (SOCMs), however, may often find themselves in austere tactical environments where evacuation of a teammate to an MTF for a medical emergency would entail either significant delays to treatment or compromise of the unit's mission. Although SOCM-trained medics are not routinely authorized by the services to treat non-traumatic emergencies, in many SOF situations, training SOCMs to treat at least some medical emergencies may result in both improved outcome for the individual and an improved probability of mission success. The disorders chosen have one of the following properties in common: they are relatively common; they are acute in onset; the SOCM is able to provide at least initial therapy that may favorably alter the eventual outcome; and the condition is one that is either life-threatening or could adversely effect the mission readiness of the SOF operator.

The protocols outlined in the following pages carry the following assumptions:

A. The SOCM medic is in an austere environment where a medical treatment facility or a unit sick call capability is not available. If a medical treatment facility or a medic authorized to treat patients independently is available, then the patient should be seen in those settings rather than by a SOCM medic.
B. The individual to be treated is a team member, a coalition partner, or a detainee.
C. Immediate evacuation may not be possible and, even if it is, may still entail significant delays to definitive treatment. The medical problem may worsen significantly if treatment is delayed.
D. The SOCM will contact a consulting physician as soon as feasible.
E. SOCM treatment will be done under the appropriate protocol.
F. Medication regimens are designed to minimize the number of medications the SOCMs are required to learn and carry. Medications have been used for multiple conditions when feasible without compromising care.
G. Appropriate documentation of diagnosis and treatment rendered in the patient's medical record will be accomplished when the unit returns to forward operating base.
H. Note these protocols are not designed to allow SOCM medics to conduct Medical/Civic Action (MEDCAP) missions independently.
I. Evacuation recommendations are based on the appropriate therapy per protocol being initiated on diagnosis.
J. The definitions of Urgent, Priority, and Routine evacuations are based on the times found in Joint Publication 4-02.2 of 2, 4, and 24 hours respectively.
K. The changes in the combat pill pack (Moxifloxacin and Mobic), as recommended by the Committee on Tactical Combat Casualty Care, have been changed in the TME Protocols.
L. The Fentanyl oral dosage of 800mcg, as recommended by the CoTCCC has been incorporated into the pain protocol.
M. The change in the IV antibiotics has also been changed to reflect medication availability.
N. When possible, alternate antibiotics or antiemetics have been listed.
O. For any infection, limit contact and use universal precautions.

TABLE OF CONTENTS

Acute Abdominal Pain

SPECIAL CONSIDERATIONS:

1. Common causes in young healthy adults include appendicitis, cholecystitis, pancreatitis, perforated ulcer, and diverticulitis.
2. Consider constipation/ fecal impaction as a potential cause of abdominal pain.

SIGNS AND SYMPTOMS:

1. Severe, persistent or worsening abdominal pain is the key sign.
2. Rigid abdomen
3. Rebound abdominal tenderness
4. Fever
5. Diarrhea is not typical but can be present with appendicitis.
6. Absence of bowel sounds
7. Focal percussive tenderness
8. Nausea and/or vomiting

MANAGEMENT:

1. Start IV with normal saline (NS) at 150 cc/hr.
2.  Ertapenem 1 gm IV QD **OR** 3rd generation Cephalosporin Rocephin (ceftriaxone) 1 gm IV qd
3. Keep patient NPO
4.  Tylenol (acetaminophen) 1000 mg PO q6h PRN pain (OK to take with sip of water)
5.  Zofran (ondansetron) 4 mg IV undiluted administered over 2 to 5 minutes or IM BID for nausea/vomiting, **OR** Phenergan 25 mg IM/IV/PO.
6.  For severe pain, use Fentanyl 800 mcg oral transcutaneous lozenge (attempt to discuss treatment with receiving surgeon before use). This medication needs to be well documented when use

DISPOSITION:

1. *Urgent* evacuation to a surgical facility.

Acute Barotrauma from Diving or Swimming (Includes Eardrums, Sinuses, Lungs)

SPECIAL CONSIDERATIONS:

1. Barotrauma (damage from changes in pressure) can occur from descent in the water column ("squeeze") or from ascent from depth if compressed air was used ("reverse squeeze" or pulmonary over-inflation).
2. The most commonly affected site is the middle ear and tympanic membrane, but paranasal sinuses and even teeth can be affected.
3. Pulmonary barotrauma occurs when compressed air is breathed at depth followed by ascending with a closed airway (i.e. breath-holding) , and can cause pneumothorax or arterial gas embolism.

SIGNS AND SYMPTOMS:

1. Middle ear - acute pain in ears, usually on descending. May be accompanied by tinnitus and vertigo. Exam may show redness, bleeding, or rupture of tympanic membrane.
2. Paranasal Sinuses - acute pain in affected sinus area (mid-face, upper jaw, peri-orbital, or forehead). May cause bleeding from nose or facial bruising.
3. Dental - acute pain localized to tooth or jaw, usually upon ascent from diving.
4. "Facemask Squeeze", with conjunctival hemorrhage and peri-orbital bruising, may occur if mask is not equalized..
5. Pulmonary Over-inflation: cough, shortness of breath, sharp pain over one side of chest with deep inspiration, voice change, or crepitation in skin over upper chest or neck (subcutaneous emphysema). Possibly decreased breath sounds over one side of chest (pneumothorax).
6. 

Pulmonary barotraumas may lead to cerebral arterial gas embolus (CAGE). CAGE may cause symptoms similar to a stroke, with confusion, visual changes, speech difficulty, or unconsciousness. Monitor patient carefully for neurological signs and symptoms.

MANAGEMENT:

1. Middle ear - if tympanic membrane is not ruptured, no specific treatment other than rest and avoidance of further pressure changes. Decongestants optional. If TM is ruptured, protect ear from water or further trauma. Consider antibiotics, but do not use ear drops. Refer to higher level of care when feasible.
2. Paranasal Sinus barotraumas. No specific treatment other than avoidance of further trauma. Decongestants may be helpful.
3. Dental. No specific treatment other than pain control, observation, and evaluation of underlying dental defect (abscess, cavity, or loose filling).
4. Facemask squeeze - No specific treatment. Cold compress may reduce bruising, if it occurs.
5. Pulmonary barotraumas - if no respiratory distress, subcutaneous emphysema or small pneumothorax may be treated with oxygen breathing at normal pressure. Monitor pulse oximetry, if available. If respiratory distress occurs, treatment for tension pneumothorax, including needle thoracentesis or tube thoracostomy (chest tube), may be necessary.
6. 

If cerebral arterial gas embolus is suspected, administer 100% oxygen and IV normal saline and consider evacuation to recompression chamber ASAP. If possible, avoid altitude exposure greater than 1000 feet during evacuation.

DISPOSITION.

1. Cerebral arterial gas embolus or pneumothorax with respiratory distress, *Urgent* Evacuation
2. Mild to moderate middle ear, sinus, or pulmonary barotraumas without respiratory distress, Observation and *Routine* evacuation.
3. Tympanic Membrane rupture - *Routine* evacuation for consultation.

Acute Behavioral Changes
(Includes Psychosis, Depression and Suicidal Impulses)

SPECIAL CONSIDERATIONS:

1. In a tactical setting consider sleep deprivation as a cause.
2. Etiologies are numerous and will often dictate the management; thus, mental status changes could be caused by head trauma, metabolic and endocrine disease processes, environmental toxins, infections, combat stress disorder, hypoxia, hyperthermia, hypothermia pharmaceutical agent use (i.e. mefloquine) or withdrawal.
3. Consider diabetic hypoglycemia as a cause of altered mental status

SIGNS AND SYMPTOMS:

1. Acute behavioral changes include withdrawal, depression, aggression, confusion, or other behavioral patterns atypical for the individual.
2. Psychosis is an acute change in mental status characterized by altered sensory perceptions that are not congruent with reality:
   A. Auditory and/or visual hallucinations
   B. May include violent or paranoid behavior
   C. Disorganized speech patterns are common
   D. May include severe withdrawal from associates

MANAGEMENT:

1. Remove all weapons or potential weapons from patient and treating medic.
2. Place patient in safe environment under continuous surveillance
3. If hypoxia is suspected as a cause, check pulse oximetry.
4.  For acute agitation, combativeness, or violent behavior, restrain patient with at least four individuals and give Valium (diazepam) 10 mg IM.
5.  Repeat Valium (diazepam) once if needed after 30 minutes.
6. Consider giving contents of 1 sugar packet sublingually to treat for possible hypoglycemia.
7.  **IF MENINGITIS IS SUSPECTED OR IF THERE IS A DECREASE IN MENTAL STATUS, USE VALIUM WITH CAUTION DUE TO POSSIBLE RESPIRATORY DEPRESSION, HYPOTENSION, AND MASKING OF PROGRESSION OF DISEASE RELATED ALTERED MENTAL STATUS.**
8.  If meningitis is suspected, use the *Meningitis* protocol.
9.  If sedated or restrained, maintain constant vigilance for a change in the hemodynamic status or loss of airway reflexes.

DISPOSITION *Urgent* Evacuation

Acute Dental Pain

SPECIAL CONSIDERATIONS:
Most common causes are deep decay, fractures of tooth crown/root or acute periapical (root end) abscesses

SIGNS AND SYMPTOMS:

1. Intermittent or continuous pain, usually intense, heat or cold sensitivity
2. Visibly broken/cracked tooth
3. Severe pain on percussion
4. Intraoral swelling/abscess

MANAGEMENT:

1.  Follow *Pain Management Protocol*
2.  If signs and symptoms of infection are present, administer Keflex, 250 mg qid for 7 days **OR** Rocephin 1 gm IV/IM qd x 7 days

DISPOSITION
1. Evacuation usually not necessary
2. *Routine* evacuation if not responding to therapy

Acute Head and Neck Infection, Including Epiglottitis

SPECIAL CONSIDERATIONS:

1. Most common causes in young healthy patients include odontogenic (dental origin) cutaneous sources or post-injury (wound or fracture) infections.
2. These infections may progress rapidly from minor to airway/life threatening

SIGNS AND SYMPTOMS:

1. Pain, fever and malaise
2. Intra/extra oral swelling
3. Trismus
4. Pus
5. Dysphagia
6. Airway compromise

MANAGEMENT:

1. Manage airway and breathing first!
2. Place patient in position of comfort
3. Monitor pulse oximetry
4. O2 prn
5. IV access
6.  Moxafloxacin 400 mg po qd for 7 days **OR** Rocephin 1 gm IV/IM qd for 7 days
7.  Follow *Pain Management Protocol*
8.  **FOR ANY AIRWAY INVOLVEMENT, CONSIDER DECADRON, 10 MG IV**
9. If airway intervention is felt to be indicated, make a single attempt at intubation if feasible (the epiglottis is not swollen to the extent that visualization of cords is not possible.)
10. If intubation is attempted, do not attempt the procedure more than once. If intubation has failed, the next step is a cricothyroidotomy (using lidocaine if conscious).
11.  Have cricothyroidotomy kit available before attempting intubation

DISPOSITION

1. If there is no airway compromise present and the infection is not widespread *Routine* Evacuation
2. If any airway compromise is present - *Urgent* Evacuation

Acute Mountain Sickness (AMS)

SPECIAL CONSIDERATIONS:

1. Usually occurs at altitudes of 8,000 ft. and higher.
2. Consider pretreatment with Diamox, 250 mg BID, when rapid ascent to altitudes above 8,000 feet may occur
3. Preceded by 6-12 hour latent period after ascent.
4. Can avoid onset by limiting initial ascent to no higher than 8,000 ft., then 1,000 ft. per day thereafter.
5. A specific acute mountain sickness prophylaxis protocol may already exist at your location.

SIGNS AND SYMPTOMS:

1. Generally benign and self-limited, but symptoms may become debilitating.
2. Headache
3. Nausea/vomiting
4. Insomnia
5. No correlation with fitness level (likely genetic predisposition).

MANAGEMENT:

1. Halt ascent.
2.  In a severe case of AMS or if patient is allergic to sulfa, give Decadron (dexamethasone) 10 mg IM/IV initially, followed by 4mg IM, IV, or PO q6h for 3 days.
3.  Diamox (acetazolamide) 250 mg PO BID **UNLESS PATIENT IS ALLERGIC TO SULFA.**
4.  Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If no response, follow *Pain Management Protocol.*
5.  Zofran (ondansetron) 4 mg IV undiluted administered over 2-5 minutes or IM BID for nausea and vomiting or 8 mg PO, **OR** Phenergan 25 mg IM/IV/PO.
6. Descend 1,500 ft. or more for severe or refractory cases if tactically feasible.
7. PO or IV hydration per *Dehydration Protocol* PRN
8.

DISPOSITION:

1. Most cases are relatively mild, resolve in 2-3 days, and do not require evacuation.
2. Remain vigilant for signs of HACE (altered mental status and ataxia) or HAPE (dyspnea at rest). *See individual protocols for management of these diseases.*

Allergic Rhinitis/ Hay Fever/ Cold Like Symptoms

SPECIAL CONSIDERATIONS:
1. History of allergies to cedar, mold, pollen, etc.

SIGNS AND SYMPTOMS:

1. Clear nasal drainage
2. Pale, boggy or inflamed nasal mucosa
3. With or without complaints of nasal congestion
4. Watery or red eyes
5. Sneezing
6. No oral temperature

MANAGEMENT:

1.  Pseudoephedrine (Sudafed), 30 mg tabs, 2 tabs every 4 - 6 hours
2.  **OR** Benadryl (diphenhydramine) 25 - 50 mg PO if tactically feasible. **(Drowsiness is a side effect.)**
3. Increase oral fluid intake

DISPOSITION:

Anaphylactic Reaction

SPECIAL CONSIDERATIONS:

1. Acute, widely distributed form of shock which occurs within minutes of exposure to an allergen.
2. Primary causes include insect envenomation, medications, and food allergies.
3. Death can result from airway compromise, inability to ventilate, or cardiovascular collapse.
4. The medic's responsibility is to know if members in the unit have such a condition. Moreover, the medic most also ensure that the member has some sort of anaphylaxis kit and is trained to use it.

SIGNS AND SYMPTOMS:

1. Wheezing (bronchospasm)
2. Dyspnea
3. Stridor (laryngeal edema)
4. Angioedema
5. Urticaria, Hives
6. Hypotension
7. Cardiac dysrrhythmias
8. Myocardial ischemia

MANAGEMENT:

1.  Epinephrine is the mainstay of therapy.
   a. 0.5 mg (0.5 ml of 1:1000 IM**). DO NOT USE INTRAVENOUSLY.**
   b. Repeat one time in five minutes if symptoms persist
2.  Benadryl (diphenhydramine) 50 mg IM, IV, or PO
3. IV access with normal saline TKO (heplock)
4.  Decadron (dexamethasone) 10 mg IM or IV
5. Oxygen (if available)
6. Pulse oximetry monitoring
7.  Zantac (Ranitidine) 150 mg po or 50 mg IV/IM
8.  If severe respiratory distress exists, aggressive airway management with bag-valve-mask and airway adjuncts (oral and nasopharyngeal airways). Intubate early if no response to epinephrine.
9. Administer a 1 to 2 liter normal saline bolus for hypotension; then titrate to establish systolic blood pressure > 90 mmHg or normal radial pulse if BP cuff not available.

DISPOSITION:

1. If signs and symptoms resolve completely, monitor for 6 hours. Evacuation is not required if patient remains stable.
2. *Urgent* evacuation for severe cases not responsive to initial therapy or recurrence of symptoms during the 6 hour observation period.

Asthma (Reactive Airway Disease)

SPECIAL CONSIDERATIONS:

1. Pulmonary disorder characterized by bronchiolar hyper-responsiveness and narrowing of the distal airways.
2. SOF patients may mask early signs and symptoms due to physical fitness, but may suddenly worsen.
3. Pulse oximetry hemoglobin oxygen saturation should be greater than 96% unless patient is at altitude.
4. Other disorders to consider: anaphylactic reaction, spontaneous pneumothorax, HAPE, and pulmonary embolism.
5. May see acute exacerbations of asthma with changes in geographic locations due to varying allergen levels in the environment.

SIGNS AND SYMPTOMS:

1. Wheezing
2. Dyspnea
3. Respiratory distress

MANAGEMENT:

1.  Albuterol (metered dose inhaler – works better with use of spacer) 2 to 3 puffs q5 min for 3 times
2.  **IF THERE IS NO RESPONSE TO ALBUTEROL,** Epinephrine 0.5 mg (0.5 ml of 1:1000 solution) IM **(DO NOT INJECT INTRAVENOUSLY)**. May repeat one dose in 5-10 minutes.
3. IV access with saline lock
4.  Decadron (dexamethasone) 10 mg IV or IM
5. Oxygen (if available)
6. Pulse oximetry monitoring
7.  Field intubation is not indicated for this disorder unless respiratory arrest occurs.
8.  If there is superimposed fever, chest pain, and cough, treat per *Pneumonia* protocol.

DISPOSITION:

1. If the patient responds to management, observe for 4 hours and then return to duty if there is decreased wheezing upon auscultation, increased ease of respiration, and normal oxygen saturation.
2. If Returned To Duty, continue Albuterol (2 puffs every 6 hours and re-evaluate in 24 hours. Repeat Decadron 10 mg IM qd for 4 days if symptoms recur.
3. If poor response to therapy, arrange *Urgent* evacuation.

Back Pain (Acute, Musculoskeletal, Severe)

SPECIAL CONSIDERATIONS:
1. Usually there is a previous history of back pain.
2. Generally musculoskeletal in etiology.
3. Often associated with heavy lifting or unaccustomed physical activity.

SIGNS AND SYMPTOMS:

1. Onset of acute back pain – often poorly localized.
2. Pain worsens with movement.
3. Pain radiating down one of the legs is usually caused by a herniated intervertebral disc.
4. Lack of neurological involvement :
   A. No weakness
   B. No numbness
   C. No bowel or bladder dysfunction
5. Pain is often severe and debilitating.

MANAGEMENT:

1.  Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If no response, follow *Pain Management Protocol.*

2. Apply cold compress to painful area for 20-25 minutes TID, followed by stretching.

3.  Trigger point injections with local anesthestic (if trained). Lidocaine, 1-2 cc per trigger point. May repeat daily for 2 days.

4.  If the above therapy is unsuccessful after 24 hours, consider using Valium (diazepam) 10 mg IM/ IV. Repeat once in 6-8 h if needed.

5. Minimize activity initially, but encourage a gradual return to full mobility as soon as tolerated.

6. Avoid high impact exercises (vigorous calisthenics) or other vigorous exercise until fully recovered.

7. If back pain is accompanied by fever and/or urinary symptoms, treat as per *Flank Pain Protocol.*

DISPOSITION:
1. Evacuation is often not required if the back pain responds to therapy.
2. Routine evacuation for severe cases not responding to therapy.
3. Urgent evacuation for patients with neurological involvement (other then pain)
   A. Weakness
   B. Bowel or bladder dysfunction
   C. Anesthesia

Bronchitis/Pneumonia

SPECIAL CONSIDERATIONS:

1. Consider also high altitude pulmonary edema (HAPE) at high altitudes.
2. Consider also pulmonary embolism (PE) and pneumothorax (fever and productive cough are atypical for these).
3. Patient may already be on doxycycycline for malarial prophylaxis. Therefore, assume causative organism to be doxycycline resistant.

SIGNS AND SYMPTOMS:

1. Fever
2. Productive cough, especially with dark yellow, red tinged, or greenish sputum
3. Chest pain
4. Rales may be present and breath sounds may be decreased over the affected lung.
5. Dyspnea may be present in severe cases.

MANAGEMENT:

1.  Mild cases: Zithromax (azithromycin) 500 mg PO first dose and then 250 mg QD for 4 days **OR** Moxifloxacin 400 mg PO QD for 5 days
2.  **Severe Cases:** Add Ertapenem 1 gm IV/IM **OR** 3rd Generation Cephalosporin IV Rocephin (ceftriaxone) 1 gm qd IV
3.  Albuterol by metered dose inhaler 2 to 4 puffs q4 to 6h
4.  Tylenol (acetaminophen) 1000 mg PO q6h PRN pain and/or fever or *Pain Management Protocol*
5. Pulse oximetry monitoring
6. Oxygen for hypoxic patients (if available)
7. Descend 1,500 – 3,000 ft. if at high altitude

DISPOSITION:

1. *Urgent* evacuation for severe dyspnea.
2. *Priority* evacuation otherwise.

Cellulitis

SPECIAL CONSIDERATIONS:
1. Superficial bacterial skin infection
2. Often secondary to trauma or scratching other skin lesions
3. Generally begins about 24 hours following a break in the skin, but more serious types of cellulitis may be seen as early as 6-8 hours following animal or human bites.

SIGNS AND SYMPTOMS:

1. A painful, erythematous, slightly raised plaque with well-demarcated borders is seen.
2. Fever may or may not be present.
3. Typically, erythema spreads without treatment.
4. Rapidly spreading and very painful infections suggest the possibility of necrotizing fasciitis, a life-threatening infection of the deeper tissues, and should be treated per the bacterial *Sepsis* protocol.

MANAGEMENT:

1.  Moxifloxacin 400 mg PO QD x 10 days **OR** Zithromax pack
2. Clean and dress wound and surrounding area.
3. Use a marker to demarcate the border of the infection and re-evaluate in 24 hours.
4. If possible, limit activity until infection clears.
5.  For cellulitis not responding to above therapy, use Ertapenem 1gm IV/IM QD **OR** 3rd generation Cephalosporin and continue with PO (Moxifloxacin 400 mg po qd **OR** Zithromax Pack).
6. Follow *Pain Management Protocol.*

DISPOSITION:
1. Re-evaluate daily and watch for progression of erythema while on antibiotics.
2. Typically evacuation is not needed, but *Priority* evacuation should be initiated if improvement is not seen within 24-48 hours or if infection continues to worsen on antibiotics.

Chest Pain of Possible Cardiac Origin

SPECIAL CONSIDERATIONS:

1. This treatment protocol assumes no access to ACLS monitoring and defibrillation equipment.
2. The Special Operations Combat Medic (SOCM) typically does not carry most ACLS medications when deployed in tactical operational environments.
3. Myocardial infarctions (heart attacks) usually occur in patients over 40, but may occasionally be seen in younger individuals.
4. Beta blockers were also not felt to significantly improve likely outcome in the tactical setting.

SIGNS AND SYMPTOMS:

1. H/O hypertension, diabetes, smoking, elevated cholesterol, obesity, family history of MI at a young age are all risk factors.
2. Substernal chest pain which may radiate to left arm or jaw.
3. Pain often described as pressure or squeezing.
4. Dyspnea
5. Diaphoresis (sweating)

MANAGEMENT:

1.  Aspirin (ASA) 325 mg – chew to speed absorption
2. IV access
3.  Morphine sulfate 4 mg IV initially, then 2 mg q5-15min as needed for pain relief
4. Oxygen (if available)
5. Pulse oximetry monitoring

DISPOSITION:

1. *Urgent* evacuation
2. The evacuation package should include personnel certified in ACLS and an evacuation platform with ACLS equipment and medications.

Constipation/Fecal Impaction

SPECIAL CONSIDERATIONS:

1. Often seen with change of rations in the field.
2. Differential diagnosis includes acute appendicitis, volvulus, ruptured diverticulum, bowel obstruction, and pancreatitis.
3. Acute onset, severe pain, point tenderness, and fever point to etiologies other than constipation and fecal impaction.

SIGNS AND SYMPTOMS:

1. A recent history of infrequent passage of hard, dry stools or straining at defecation.
2. Abdominal pain, which is typically poorly localized with cramping.
3. If pain becomes severe and is associated with nausea/vomiting and complete lack of flatus or stools, consider a bowel obstruction.

MANAGEMENT:

1.  Dulcolax (bisacodyl) 10 mg PO TID as needed to initiate bowel movement
2.  Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain (***no narcotics – they cause constipation***)
3. For impacted stool or no relief with above measures, give normal saline enema with 500 ml per rectum (use lubricated IV tubing).
4. If above measures fail, perform digital rectal examination to check for fecal impaction. If fecal impaction is present, perform digital disimpaction, if trained.
5. Increase PO fluid intake.
6. Increase fiber (fruits, bran, and vegetables) in diet if possible.
7.  Consider parasitic infecitions.

DISPOSITION:

1. Evacuation is usually not required for this condition.
2. *Routine* evacuation if there is no response to therapy.
3. If severe pain, rigid board-like abdomen, fever, and/or rebound tenderness develop, and moderate to large amounts of blood are present in the stool, then treat per the *Surgical Abdomen* protocol.

Contact Dermatitis (Poison Ivy and Oak)

SPECIAL CONSIDERATIONS:

1. Insect bite(s) as a differential diagnosis - are also accompanied by itching, but have discrete red popular lesions(s).
2. Cellulitis as a differential diagnosis- is bright red, painful, not pruritic, and typically becomes steadily worse without antibiotics.
3. Fungal infection as a differential diagnosis – is not always pruritic; infections sites(s) slowly enlarge without therapy.
4. Effects are particularly dangerous if there is contact in or around the eyes.

SIGNS AND SYMPTOMS:

1. Acute onset
2. Skin erythema
3. Intense itching (pruritis)
4. May see edema, papules, vesicles, bullae, discharge, and/or crusting.

Management:

1. Change clothes when possible and bag original clothes until they can be machine washed.
2. Wash area with mild soap and water to remove resin from skin.
3. Apply cold wet compress to affected area to help decrease itching.
4.  If available, apply 1% hydrocortisone cream to the affected area and cover with a dry dressing to help prevent spread to other parts of the body or clothing.
5.  In severe cases, Decadron 10 mg IM daily for 5 days, PRN.

DISPOSITION:

1. Evacuation is not needed for mild cases.
2. Priority evacuation for severe symptoms, intra-oral or eye involvement, or >50% body surface area (BSA) involvement care.
3. Monitor for secondary infection; treat as per C*ellulitis Protocol* if suspected on the basis of increasing pain, redness, or purulent crusting.

Corneal Abrasions, Corneal Ulcers, Conjunctivitis

SPECIAL CONSIDERATIONS:

1. Contact lens corneal abrasions are at a high risk for development of a corneal ulcer. They should not be patched and require more intensive antibiotic therapy.
2. Consider LASIK Flap dislocation for anyone that sustains eye trauma after LASIK surgery.

SIGNS AND SYMPTOMS:

1. History of eye trauma or contact lens wear
2. Eye pain – typically becoming worse over several days
3. Eye redness
4. Tearing
5. Blurred vision
6. Light sensitivity
7. Fluorescein positive (bright yellow area of the cornea after applying fluorescein and examining the eye with a cobalt blue light source)
8. White or gray spot on cornea (usually need tangential penlight exam to see) for corneal ulcer
9. For sudden onset of eye pain after trauma in a patient after LASIK surgery, consider LASIK flap dislocation

MANAGEMENT:

1. Remove contact lens if worn.
2.  Tetracaine 0.5%, 2 drops in the affected eye for pain relief. Do not dispense to patient.
3. Check for foreign body to include eyelid eversion.
4.  Zymar (gatifloxacin) 0.3% drops – 1 drop in the affected eye qid while awake.
5.  Tylenol (acetaminophen) 1000 mg PO q6h PRN pain or *Pain Management Protocol*
6. Reduce light exposure, stay indoors if possible - sunglasses if not.
7. For corneal abrasions: monitor daily for worsening signs and symptoms of a corneal ulcer (increasing pain and development of a white or grey spot at abrasion site). **DO NOT PATCH.**
8. Check with fluorescein drops daily—abrasions should get progressively smaller. Continue antibiotic drops until 24 hours after cornea becomes fluorescein negative (no bright yellow spot).
9. **IF CORNEAL ULCER PRESENT**: Increase Zymar to q2h and priority evacuation.

DISPOSITION:

1. Evacuation may not be needed for corneal abrasion if improving with treatment.
2. Priority evacuation for Corneal Ulcer
3. Urgent evacuation for LASIK Flap dislocation.

Cough

SPECIAL CONSIDERATIONS:
1. Usually viral etiology, but may also occur with high altitude pulmonary edema (HAPE) and pneumonia.

SIGNS AND SYMPTOMS:
1. Cough with or without scant sputum production.
2. Often accompanied by other signs and symptoms of upper respiratory tract infection (i.e. sore throat and rhinorrhea).

MANAGEMENT:
1. Treat symptomatically (using Cepacol lozenges or other appropriate medications) when the findings on history and physical do not suggest pneumonia.
2.  Albuterol Metered Dose Inhaler 3-4 puffs q4h may also help control coughing
3. Force PO hydration.
4. Avoid respiratory irritants (smoke, aerosols, etc).

DISPOSITION:
1. Evacuation is usually not required.
2. Treat as *Pneumonia* if accompanied by fever, chest pain, dyspnea, and/ or colored sputum (green, dark yellow or red-tinged).

Cutaneous Abscess

SPECIAL CONSIDERATIONS:

Do not attempt I&D in the tactical setting unless:

A. The abscess is clearly red, hot, and tender to the touch.
B. The abscess is on a location other than eyelid, neck, or face and is superficial.
C. Local anesthesia with lidocaine 1% without epinephrine is available.

SIGNS AND SYMPTOMS:

1. Pain
2. Erythema
3. Warmth
4. Tenderness
5. Swelling
6. Fluctuant Mass
7. Induration

MANAGEMENT:

1. **For cellulitis without abscess, follow *Cellulitis Protocol*.**
2. Incise and drain (I&D) if discomfort is severe:
   A. Establish sterile incision site with betadine.
   B.  Local anesthesia using Lidocaine 1% without epinephrine.
   C. Incise with scalpel making an opening no larger than necessary to allow purulent material to drain freely.
   D. Incision should be parallel to skin tension lines if feasible.
   E. On initial treatment, leave wound open and pack tightly with iodoform gauze, if available. On subsequent dressings, wick the wound. **DO NOT SUTURE THE SITE**.
3. Bandage over site with wound checks daily
4.  Moxafloxacin 400 mg po qd x 10 days **OR** Zithromax pack

DISPOSITION:

1. Evacuation is usually not required.
2. Return To Duty with appropriate wound management precautions.
3. Infection precautions and daily checks of wounds site.
4. If condition is worsening (spreading erythema, increasing pain, fever) then patient needs to be treated as per *Cellulitis Protocol* and evacuate as *Priority*.

Deep Venous Thrombosis (DVT)

SPECIAL CONSIDERATIONS:

1. DVT is a potentially life threatening condition, in which a clot is present in the large veins of a leg. This clot may dislodge and become localized in the pulmonary system (pulmonary embolism).
2. May occur in young adults secondary to trauma, long airplane rides, altitude exposures, and genetic predisposition.
3. Low dose anticoagulants acceptable here because of rapid evacuation to medical treatment facility.
4. May be confused with a ruptured Baker's cyst in a tactical setting.

SIGNS AND SYMPTOMS:

1. History of preceding air travel, trauma, birth control pill use (especially smokers), or family history of DVT
2. Defined as an occluding thrombus (blood clot) in the deep venous drainage system.
3. Usually seen in the lower extremities but may occur in any of the deep veins
4. Pain and swelling in the lower extremities (often the calf muscles).
5. May have palpable venous "cord"
6. Warmth over affected area
7. Increased pain in the affected calf muscles with dorsiflexion of the foot

MANAGEMENT:

1. Monitor patient with pulse oximetry (sudden decrease in oxygen saturation suggests a pulmonary embolism.)
2.  ASA 325 mg po
3. For associated respiratory distress see *Pulmonary Embolus Protocol.*
4. Immobilize the affected extremity.

DISPOSITION:

1. *Priority* evacuation if no respiratory distress.
2. *Urgent* evacuation If respiratory distress and chest pain develop or are present

Dehydration

SPECIAL CONSIDERATIONS:
1. Troops in the field are often chronically dehydrated.
2. Prolonged missions, acute diarrhea (gastroenteritis), viral/bacterial infections, and environmental factors (heat stress or working hard) all may exacerbate the dehydration.
3. May also occur in cold or high altitude environments due to low humidity and low availability of water.

SIGNS AND SYMPTOMS:

1. Lightheadedness (worse with sudden standing)
2. Mild headache (especially in the morning)
3. Dry mucosa (mouth, nose, and eyes)
4. Decreased urinary frequency and volume
5. Dark urine
6. Degradation in performance
7. Poor skin turgor

MANAGEMENT:

1. Increase oral fluids if tolerated.
   A. Use carbohydrate/electrolyte drink mixes for fluid replacement if available. However, use a dilute solution (1:4) to avoid an osmotic shift due to high sugar/salt load.
   B. If water is to be used as a replacement fluid, add rehydration packets if available.

2. If unable to tolerate PO fluids, use normal saline (NS) IV for rehydration. Use an initial bolus of 1 liter NS, followed by attempted PO hydration. If unable to tolerate PO hydration repeat 1 liter bolus of NS.

3. If NS is not available, use available IV fluids (Ringer's, Hespan, Hextend, etc.)

4. If nausea, vomiting, and/or diarrhea are present, treat per the *Gastroenteritis Protocol*.

5. Switch to PO fluids when tolerated.

DISPOSITION:
1. Monitor closely for recurrence of dehydration.
2. If signs and symptoms resolve with treatment, no evacuation is needed.
3. If dehydration persists, *Priority* evacuation.
4. Heat stroke requires *Priority* evacuation.

Epistaxis

SPECIAL CONSIDERATIONS:
1. Common at altitude and in desert environments due to mucosal drying.
2. May be anterior or posterior
3. Posterior epistaxis may be difficult to stop and may cause respiratory distress due to blood flowing into the airway. This type of epistaxis is uncommon in young healthy adults. It is more commonly seen in older, hypertensive patients.

SIGNS AND SYMPTOMS:

1. Nosebleed
2. Often previous H/O nosebleeds

MANAGEMENT:

1.  Afrin (oxymetazoline) nasal spray 2 squirts in each nostril then pinch anterior area of nose firmly for full 10 minutes WITHOUT RELEASING PRESSURE
2.  **IF BLEEDING CONTINUES:**
   A. Insert Afrin-soaked nasal sponge bilaterally along floor of nasal cavity. Continue pinching the nose just below the nasal bridge, for 10 minutes.
3.  Once bleeding has stopped, remove the Afrin nasal sponge (after 30 minutes) and apply Bactroban to the affected nostril 2-3 times per day.
4. Clear airway of clots and other material (if required) by having patient sit up, lean forward, and blow his/her nose.
5. IV access via saline lock or NS TKO if indicted by severity of nose bleed.
6. **IF BLEEDING CONTINUES**
   A. Prepare 14 French Foley catheter (Tip is cut to minimize distal irritation)
   B. Advance catheter along floor of nose (straight in) until visible in mouth
   C. Fill balloon with 5 cc of normal saline
   D. Retract catheter until well opposed to posterior nasopharynx.
   E. Add another 5 cc of normal saline to balloon
   F. Clamp in place without using excessive anterior pressure
   G.  Moxifloxacin 400 mg po qd until packing is removed.
   H. **LEAVE BALLOON AND PACKING IN PLACE FOR 72 HOURS.**

DISPOSITION:
1. Evacuation may not be required if epistaxis is mild, anterior, and resolves with treatment.
2. *Priority* evacuation for severe epistaxis not responding to therapy or if Foley catheter is used.

Flank Pain

SPECIAL CONSIDERATIONS:
1. May be associated with testicular torsion. Assure normal external GU exam first.
2. May be associated with pyelonephritis.

SIGNS AND SYMPTOMS:
1. Flank pain
2. Flank pain radiating to testicles
3. Back pain
4. Nausea/vomiting
5. Hematuria
6. Urinary retention

MANAGEMENT:
1. IV hydration with normal saline. Give 1,000 ml over 1 hour and then 250 ml/hour.
2.  Zofran (ondansetron) 4 mg IV undiluted administered over 2 to 5 minutes or IM BID for nausea and/ or vomiting for nausea and vomiting **OR** Phenergan 25 mg IM/IV/PO
3.  Morphine 5-10 mg IV or IM or per *Pain Management Protocol*
4.  If febrile, give Rocephin 1 gm IV q 24 h.

DISPOSITION:
Priority evacuation

Fungal Skin Infection

SPECIAL CONSIDERATIONS:

1. Insect bite(s), eczema, and contact dermatitis are in the differential diagnosis - are also accompanied by itching, but have discrete red popular lesions(s).
2. Cellulitis as a differential diagnosis- is bright red, painful, not pruritic, and typically becomes steadily worse without antibiotics.
3. Acute contact dermatitis as a differential diagnosis - is diagnosed by sudden onset of intense itching, skin erythema, and a history of environmental exposure.
4. Poison Ivy and Oak as a differential diagnosis - skin erythema present and is intensively pruritic.

SIGNS AND SYMPTOMS:

1. Skin erythema
2. Pruritis is variable
3. Slow spreading
4. Borders of the erythematous plaques are generally irregular and/or circumferential.
5. Often initially diagnosed as contact dermatitis but gets worse with use of steroids (those without antifungal agent added).
6. Most common sites of infection are feet ("athlete's foot" or tinea pedis), groin ("jock itch" or tinea cruris), scalp (tinea capitus), and torso or extremities ("ring worm" or tinea corporis).

MANAGEMENT:

1.  Use Diflucan (fluconazole) 150 mg PO once per week for four weeks (total of four doses in the absence of a cure, or 1 dose after clinically clear). If not resolved after 4 weeks, refer to Physician.

2. Clean rigorously with soap without injuring the skin.

DISPOSITION

Evacuation is usually not required for this condition.

Gastroenteritis

SPECIAL CONSIDERATIONS:

1. Etiology of acute diarrhea is often viral, but bacterial or parasitic infections are common in the deployed environment.
2. Emerging fluoroquinolone resistance among enteropathogenic E. Coli and Campylobacter makes azithromycin the new primary agent for therapy.
3. Consider antibiotic-related diarrhea if on antibiotics at onset.
4. Consider parasitic infection is symptoms persist for 3 or more days.
5. Must rule out malaria if fever and GI symptoms exist in a malarious area.

SIGNS AND SYMPTOMS:

1. Acute onset of nausea, vomiting, and diarrhea
2. Fever may or may not be present

Management:

1.  Imodium (loperamide) 4 mg PO initially, then 2 mg PO after every loose bowel movement with a maximum dose of 16 mg per day
2.  Do not use Imodium in the presence of fever or bloody stools.
3.  Moxifloxacin 400 mg po qd x 3 days **OR** Zithromax pack.
4. If allergic, use Doxycycline 100 mg po bid for 7 days.
5.  Zofran (ondansetron) 4 mg IV undiluted administered over 2-5 minutes or IM BID for nausea and/or vomiting **OR** Phenergan 25 mg IV/IM/PO
6. Orally hydrate with carbohydrate/ electrolyte fortified fluids if tolerated. Use normal drinking water as a secondary fluid replacement if CHO/ electrolyte fluids are unavailable. Add electrolyte rehydration packages to water if available.
7. IV rehydration using normal saline if intolerant of oral fluids; titrate fluid intake to regain normal urination frequency, urine color, and good skin turgor.
8.  If diarrhea lasts for over 3 days treat the patient as having Giardia (also effective treatment for amebiasis), and give Flagyl (metronidazole) 500 mg PO TID for 10 days.

DISPOSITION:

1. Evacuation is usually not required if the condition responds to therapy.
2. If dehydration occurs despite above therapy, evacuate as *Priority*.
3. If severe, persistent diarrhea occurs after 5-10 days of antibiotics, evacuate as *Priority*.
4. Grossly bloody stools or circulatory compromise requires *Urgent* evacuation.
5. Monitor hydration status by observing urinary frequency, urine color, and skin turgor.

Headache

SPECIAL CONSIDERATIONS:

1. A common and usually benign disorder
2. The differential diagnosis for the acute headache is large and includes disorders that encompass the spectrum of minor to severe underlying disorders.
3. Exposure to smokeless propellants containing nitrates or other battlefield toxins from fumes may cause acute headaches.
4. Consider altitude sickness, intracranial bleeds or meningitis .

SIGNS AND SYMPTOMS:

1. If the headache is atypical for the patient, check for elevated blood pressure (if possible), fever, neck rigidity, visual symptoms, mental status changes, neurological weakness, and hydration..
2. If the patient has fever, nuchal rigidity, photophobia, petechial rash, or nausea and vomiting, proceed to the *Meningitis Protocol.*

Management:

1.  Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If no response, follow *Pain Management Protocol.*

2.  If headache is accompanied by nausea & vomiting, use Zofran (ondansetron) 4 mg IV undiluted administered over 2-5 minutes or IM BID **OR** Phenergan 25 mg IM/IV/PO .

3. Oxygen (if available) and if other therapies ineffective

4. PO or IV hydration if dehydration is suspected as a cause

5. If at altitude, consider acute mountain sickness (AMS) and treat accordingly.

DISPOSITION:

1. Evacuation is usually not required if the headache responds to therapy.
2. Acute headache in the presence of fever, severe nausea and vomiting, mental status changes, focal neurological signs, or preceding seizures, loss of consciousness, or a history of "it's the worst headache in my life" constitutes a true emergency and requires *Urgent* evacuation. Also consider *Urgent* evacuation for anyone without a prior history of headaches if their pain is severe.
3. If described as the "worst headache in my life", consider antibiotic treatment per *Meningitis Protocol*.

High Altitude Cerebral Edema (HACE)

SPECIAL CONSIDERATIONS:
1. Rare below 11,500 ft.
2. Headache is common at altitude. Ataxia and altered mental status at altitude are HACE until proven otherwise.
3. A specific HACE treatment protocol may already exist at your location.

SIGNS AND SYMPTOMS:

1. Unsteady, wide, and unbalanced (ataxic) gait
2. Altered mental status
3. Headache
4. Nausea and vomiting
5. Hallucinations
6. Disorientation
7. Typically preceded by AMS signs and symptoms
8. Cranial nerve palsy
9. Hemiparesis
10. Stupor
11. Unconsciousness

MANAGEMENT:

1. The only effective treatment is descent. Immediately descend at least 1000 ft. or until symptoms subside
2.  Decadron (dexamethasone) 10 mg IM / IV initially, then 4mg IV / IM q6h
3.  Diamox 250 mg po bid
4. Oxygen if available
5. Pulse oximetry monitoring
6.  Individuals with HACE should not be left alone and especially not be allowed to descend alone.
7. If available, use a GAMOW bag in 1 hour treatment sessions with bag inflated to a pressure of 2 psi (approximately 100 mm Hg) above ambient pressure. Four or five sessions are typical for effective treatment.

DISPOSITION:
Urgent evacuation

High Altitude Pulmonary Edema (HAPE)

SPECIAL CONSIDERATIONS:
1. Caused by the hypoxia of altitude, HAPE is the most common cause of death from altitude illness.
2. Usually occurs above 8,000 ft.; respiratory distress at high altitude is HAPE until proven otherwise.
3. A specific HAPE treatment protocol may already exist at your location

SIGNS AND SYMPTOMS:

1. Shortness of breath
2. Dry cough
3. Dyspnea at rest
4. Symptoms of AMS
5. Late symptoms include:
   A. Gurgling on auscultation
   B. Blood tinged sputum (hemoptysis)
   C. Generalized weakness
   D. Severe respiratory distress
   E. Orthopnea

MANAGEMENT:

1. The only effective treatment is immediate descent. Descend at least 1000 ft. or until symptoms subside.

2. Pulse oximetry monitoring

3.  Decadron (dexamethasone) 10 mg IV / IM initially, then 4mg q6h

4.  Nifedipine 10 mg PO; repeat q 8 h if blood pressure is stable.

5. Oxygen 6-10 liters/min if available

6. If immediate descent is not tactically feasible, and if a GAMOW bag is available, use a GAMOW bag in 1 hour treatment sessions with bag inflated to a pressure of 2 psi (approximately 100mm Hg) above ambient pressure. Four or five sessions are typical for effective treatment. GAMOW BAG TREATMENT IS NOT A SUBSTITUTE FOR DESCENT.

DISPOSITION:
1. Evacuation may not be required if good response to therapy.
2. Do not re-ascend in a tactical setting.
3. Avoid vigorous activity for 3-5 days.
4. *Priority* evacuation for patients that worsen despite therapy.

HIV Post Exposure Prophylaxis

SPECIAL CONSIDERATIONS:

1. Addition of the antiretroviral medications is expensive.
2. Initiation of the highly active antiretroviral therapy (HAART) must occur ASAP. Ideally, this is less than 8 hours after exposure, but still has some effect up to 72 hours after exposure.
3. Antiretrovirals have a significant side effect profile, including nausea, vomiting and diarrhea.
4. The amount of medications is dependant on the risk at the deployed location.
5. Obtain a sample of the source's blood for HIV testing, if applicable.

HIGH RISK EXPOSURES

1. Percutaneous injury (Needlestick or other contaminated penetrating injury).
2. Contact between body fluids and mucous membranes or non-intact skin.
3. Prolonged contact between body fluids and intact skin.
4. Unprotected sexual intercourse with a high risk individual.

MANAGEMENT:

1. Wash area with soap and water to clean area and minimize exposure.
2.  Initiate antiretroviral triple therapy (recommend Combivir® [Lamivudine and Zidovudine] 1 tablet po BID, Viracept® [Nelfinavir] 1250 mg po BID) as soon as possible.
3.  Do not use alcoholic beverages after Combivir administration.
4.  Treat nausea and vomiting with antiemetics (Zofran **OR** Phenergan).
5. Maintain hydration and nutrition status

DISPOSITION:

1. If a significant exposure exists and HAART is not available, *Urgent* evacuation
2. If HAART is available, *Routine* evacuation

31

Hyperthermia

SPECIAL CONSIDERATIONS:

1. Heat stroke is a life-threatening effect of hyperthermia and characterized by altered mental status and/or the absence of sweating.
2. Mild and moderate hyperthermia can often be treated and the casualty returned to duty.
3. Dehydration accompanies hyperthermia due to sweating.
4. Suggest that colloids (Hextend, Hespan) be avoided in favor of crystalloids.

SIGNS AND SYMPTOMS:

1. Warm skin to touch
2. Increased thirst
3. Sweating (may be absent late)
4. Muscle cramps
5. Abdominal cramps
6. Mild-moderate weakness
7. Positive tilt test
8. Tachycardia
9. Tachypnea
10. Altered mental status

MANAGEMENT:

1. Place in cool area; dampen patient's clothes with water. Place ice packs on sides of neck, in armpits, and in groin area. **AVOID SHIVERING WHICH WILL RAISE THE PATIENT'S CORE BODY TEMPERATURE!!**

2. **Increase oral fluids if tolerated.**
   A. Use carbohydrate/electrolyte drink mixes for fluid replacement if available. However, use a dilute solution (1:4) to avoid an osmotic shift due to high sugar/salt load.
   B. If water is to be used as a replacement fluid, add rehydration packets if available.

3. If unable to tolerate PO fluids, use normal saline (NS) IV for rehydration. Use an initial bolus of 1 liter NS, followed by attempted PO hydration. If unable to tolerate PO hydration repeat 1 liter bolus of NS. 2-4 liters of NS may be required.

4.  Zofran (ondansetron) 4 mg IV undiluted administered over 2-5 minutes or IM BID for nausea and vomiting or 8 mg PO, **OR** Phenergan 25 mg IV/IM/PO.

5. **For heat stroke,** apply external ice (if available) until core temperature reaches 39 degrees C (101 degrees F). Avoid excessive cooling to prevent shivering.

DISPOSITION:

1. Mild to moderate cases can be treated and not evacuated.
2. Casualties with heat stroke should be evacuated to a higher level of care.
3. *Priority* evacuation for severe hyperthermia

Hypothermia

SPECIAL CONSIDERATIONS:
1. Cardiac resuscitation should only be attempted during active rewarming.
2. Drug effects often delayed or diminished in moderate to severe hypothermia.

SIGNS AND SYMPTOMS:

1. Shivering
2. Pale, cool skin
3. Weak pulses
4. Frostbite
5. Altered mental status
6. Irregular heartbeat

MANAGEMENT:

1. Move to warm environment and remove any wet clothing.
2. Begin passive rewarming by placing in a blanket or device.
3. If responsive, administer warm fluids by mouth.
4. Consider active rewarming by administering IV fluids warmed to 40 degrees C (101.6 degrees F).
5. Do not attempt to rewarm pulseless hypothermic victims unless a defibrillator and all necessary resuscitation medications available.
6. Immerse frostbitten areas in water warmed to 40 degrees C (101.6 degrees F) only when there is no danger of refreezing.

DISPOSITION:
1. Mild to moderate cases can be treated and not evacuated.
2. Severe cases should be evacuated to facility capable of active rewarming and resuscitation.
3. *Priority* evacuation for severe hypothermia

Ingrown Toenail

SPECIAL CONSIDERATIONS:
1. Typically caused by trimming toenails in a curved fashion which impinges the lateral nail fold.
2. Other causes include nail deformity, tight fitting shoes, and rotational deformity of toes.
3. Can occur in any toe of the foot but usually occurs in the big toe.

SIGNS AND SYMPTOMS:

1. Presents with pain, edema, hyperkeratosis, and erythema of the lateral nail fold.
2. Pressure over the nail margins increases the pain.
3. Inflammatory or infectious responses are generally localized.
4. Partial or complete nail removal is typically indicated in chronic inflammation/ infection, with severe pain, of both lateral nail folds especially if the condition has lasted one month or greater

MANAGEMENT:

1. Partial toenail removal:
   A. Clean the site with soap, water, and betadine.
   B.  Perform a digital block using lidocaine 1% **WITHOUT EPINEPHRINE.**
   C. Apply a tourniquet at the base of the toe.
   D. Stabilize the toe in the nondominant hand and remove the lateral quarter of the nail toward the cuticle, using a sharp scissors with upward pressure.
   E. Separate the nail from the underlying matrix and grasp it with a hemostat or forceps, removing the free piece by twisting it toward the remaining nail.
   F. Curette the posterior and lateral nail grooves to remove any debris.
   G. Remove the tourniquet if one was used.
   H. Control bleeding with direct pressure and dry the underlying nail bed.
2.  Bactroban (mupirocin) 2% ointment to exposed nail bed.
3. Dress the area with a nonadherent dressing followed by a dry sterile dressing.
4. Instruct the patient to wash the area daily.
5. Recheck wound and change dressing daily.
6. Instruct patient to wear less constricting shoes and to trim their nails straight across. Optimal care is to limit walking and marching for 3-5 days.
7.  Tylenol (acetaminophen) 1000 mg PO q6h PRN pain. If no response, follow *Pain Management Protocol.*
8.  Systemic antibiotics are typically not needed in these procedures; however consider using Moxifloxacin 400 mg po qd for 10 days, **OR** Zithromax pack if an infection is suspected (increasing pain, redness, and swelling).

DISPOSITION:
1. Evacuation is usually not required if the condition responds to therapy.
2. The nail bed may have serous drainage for several weeks, but will usually heal within 2-4 weeks.

Joint Infection

SPECIAL CONSIDERATIONS:
1. May result from penetrating trauma (especially animal or human bites), gonorrhea, or iatrogenic causes (i.e. attempted aspiration of joint effusion).
2. Consider also an acute joint effusion due to blunt trauma or overuse (usually less red and no fever).

SIGNS AND SYMPTOMS:

1. H/O adjacent penetrating trauma or infection
2. Single red, swollen joint
3. Fever
4. Pain

MANAGEMENT:

1. IV access
2.  Ertapenem 1 gm IV/IM QD **OR** 3rd generation Cephalosporin Rocephin (ceftriaxone) 2 gm IV or IM BID
3.  Tylenol (acetaminophen) 1000 mg PO q6h PRN pain. If no response, follow *Pain Management Protocol.*
4. **IMMOBILIZE THE JOINT**

DISPOSITION:
Priority evacuation

Loss of Consciousness (without Seizures)

SPECIAL CONSIDERATIONS:

1. The most common cause of loss of consciousness (LOC) in healthy adults is orthostatic hypotension (associated with sudden standing) or vasovagal syncope (associated with sudden adverse stimulus – injections are a common cause).
2. Consider hypoglycemia, anaphylactic reaction, medication, recreational drug use, head trauma, and intracranial bleeding in addition to #1.

SIGNS AND SYMPTOMS:

1. Unconsciousness

MANAGEMENT:

1. If no respirations or pulse, follow the BLS guidelines.
2. Management of orthostatic hypotension and vasovagal syncope is accomplished by placing the patient in a supine position and ensuring that the airway is open. Patients experiencing these two disorders should regain consciousness within a few seconds. If they don't, consider other etiologies and proceed to the steps below.
3. Place either 1 tube Glutose 15 (oral glucose gel) or contents of one packet of sugar sublingually.
4. IV access
5.  Narcan (naloxone) 0.8 mg IV. May be repeated in 5 minute intervals to a maximum dose of 10 mg. (Eyes may be miotic.)
6. If no response, treat for *Anaphylaxis* per protocol.
7. Pulse oximetry monitoring
8. Oxygen (if available)

DISPOSITION:

1. *Urgent* evacuation, unless loss of consciousness judged due to orthostatic hypotension or vasovagal hypotension.
2. The evacuation package should include personnel certified in Advanced Cardiac Life Support (ACLS), and a transport vehicle with equipment, supplies and medications necessary for ACLS care.

Malaria

SPECIAL CONSIDERATIONS:

1. Malaria MUST be considered in all febrile patients currently in, or recently in, a malarious area.
2. It is not uncommon for malaria to present like pneumonia or gastroenteritis (with vomiting and diarrhea)
3. *P. falciparum* is often fatal if not diagnosed and treated promptly
4. It is appropriate to treat suspected malaria cases empirically if diagnostic tests (blood smears or rapid test) are not available
5. A single negative blood smear does not rule out malaria. Patients should have blood smears every 8-12 hrs for 48 hrs to exclude malaria. FDA approved rapid diagnostic tests will likely be available soon and will be a valuable field diagnostic tool
6. Persons on effective chemoprophylaxis may have very low parasitemias and atypical presentations
7. Consider bacterial meningitis in evaluating the patient – treat for both disorders if meningitis is suspected
8. Patients who cannot tolerate PO meds must be evacuated for antimalarial therapy via IV or NG tube with antiemetic suppository
9. **IF SPECIES IS UNKNOWN, TREAT FOR P. FALCIPARIUM.**

SIGNS AND SYMPTOMS:

1. Prodrome of malaise, fatigue, and myalgia may precede febrile paroxysm by several days
2. Paroxysm characterized by abrupt onset of fever, chills, rigors, profuse sweats, headache, backache, myalgia, abdominal pain, nausea, vomiting, and diarrhea (may be watery and profuse) in *P. falciparum*
3. Intermittent fever to >40₀C (105₀F). Fever may be near continuous in P. falciparum malaria; classic "periodicity" is usually absent. Profuse sweating between febrile paroxysms
4. Tachycardia, orthostatic hypotension, tender hepatomegaly, moderate splenomegaly, and delirium (Cerebral malaria)

MANAGEMENT: *P. FALCIPARUM* MALARIA

1. Malarone (atovaquone 250 mg/proguanil 100 mg) 4 tabs daily for 3 days with food **OR** give Mefloquine 750 mg and then 500 mg 12 hours later.

3. **OR** give Doxycycline 100 mg PO bid x 7 days **PLUS** Quinine 650 mg PO TID for 3 days (Africa), **OR** 5 days (S. America), **OR** 7-10 days (SE Asia)

4. Tylenol (acetaminophen) 1000 mg PO q4h PRN fever

MANAGEMENT: *P. VIVAX* MALARIA

1. Chloroquine 1 gm PO x 1 then 500 mg daily x 3 days starting 6 hours after 1st dose PLUS primaquine 30 mg qd x 14 days (MUST rule out G6PD deficiency before giving primaquine)

DISPOSITION:

1. Complicated malaria (cerebral, pulmonary, unstable vital signs) is a medical emergency, requiring *URGENT* treatment and evacuation
2. Routine evacuation for uncomplicated cases (normal vital signs, normal mental status, no nausea and vomiting, no cough/shortness of breath)
3. In *P. Vivax* cases, gently examine patient to ensure splenomegaly has resolved before allowing return to full duty.

Meningitis

SPECIAL CONSIDERATIONS:

1. A life-threatening infection of the meninges (outer linings) of the central nervous system.
2. May be bacterial, viral, or fungal. The bacterial type may cause death in hours, even in previously healthy young adults, if not treated aggressively with appropriate antibiotics.
3. Consider malaria in differential diagnosis.

SIGNS AND SYMPTOMS:

1. Classic features include:
   A. Severe headache
   B. High fever
   C. Pain with any neck movement, particularly forward flexion
   D. Altered mental status
2. May also see:
   A. Photophobia
   B. Nausea and vomiting
   C. Malaise
   D. Seizures
3. Positive Brudzinski (pain on head and neck flexion) and Kernig's (neck pain with hip and knee flexion) signs

MANAGEMENT:

1. If this diagnosis is suspected, treatment should be initiated immediately.
2. IV access
3.  Decadron (dexamethasone) 10 mg IV q6h (IM route possible alternative but prefer IV route) or PO
4.  Ertapenem 1gm IV/IM QD **OR** 3rd generation Cephalosporin Rocephin (ceftriaxone) 2 gm 1v q 12 h (IM route possible alternative but prefer IV route)
5.  Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain and fever if able to take PO meds. If no response, follow *Pain Management Protocol.*
6. Control of nausea and vomiting with an antiemetic (Zofran **OR** Phenergan) may be necessary.
7. If seizures occur, use *Seizure Protocol.*
8.  Moxifloxacin 400 mg po x1 **OR** Rocephin 250mg IM for prophylaxis for close contacts

DISPOSITION:

1. For simple cases, no evacuation is necessary.
2. *Priority* evacuation for "malignant" otitis externa signs and symptoms:
   A. Severe headache
   B. Otorrhea (purulent drainage from ear)
   C. Cranial nerve palsy

Otitis Externa

SPECIAL CONSIDERATIONS:
1. Infection of external ear canal
2. Often called "swimmer's ear" and commonly occurs after repeated head immersion.
3. Ophthalmic antibiotic drops are used to minimize number of medications carried and to prevent possible instillation of ear drops into the eye.

SIGNS AND SYMPTOMS:

1. Ear pain – increased by passive external ear movement
2. Pruritis
3. Possible exudate in external ear canal
4. Pain with movement of ear is highly suggestive
5. Decreased auditory acuity
6. Sensation of fullness and moisture in ear
7. Pain, swelling, and erythema of ear and periauricular area in severe cases

MANAGEMENT:

1.  Zymar (gatifloxacin) – 4 gtts in affected ear q2h while awake. Ensure patient maintains head position for 5 minutes so meds do not drain out of site.

2.  If available, Cortisporin Otic drops, 5 drops tid - qid until symptoms resolve for 48 hours

3. Form a wick from a sterile dry dressing, and place into ear canal.

4.  Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If ineffective, proceed to Pain Management Protocol.

5.  **IF NO RESPONSE WITHIN 24 HOURS, OR IF SIGNS AND SYMPTOMS WORSEN,** use Moxifloxacin 400 mg po qd for 10 days **OR** Zithromax Pack

DISPOSITION:
1. For simple cases, no evacuation is necessary.
2. *Priority* evacuation for "malignant" otitis externa signs and symptoms:
   a. Severe headache
   b. Otorrhea (purulent drainage from ear)
   c. Cranial nerve palsy

Otitis Media

SPECIAL CONSIDERATIONS:

1. Infection of the middle ear which may be viral or bacterial in etiology.
2. Increased pressure in the middle ear may cause intense pain and may result in rupture of the tympanic membrane (associated with sudden decrease in pain and drainage from ear canal.)
3. The Special Operations Combat Medic (SOCM) typically may not carry an otoscope when deployed in tactical operational environments. Significant ear pain not accompanied by pain with passive movement of the external ear constitutes a presumptive diagnosis of otitis media in the tactical setting.
4. May follow air travel or ascents in mountainous terrain due to changes in ambient pressure.
5. If a patient has a history of being near a blast, consider a perforated TM.
6. Otitis Media in the SOF population is likely to be associated with changes of atmospheric pressure or a URI.

SIGNS AND SYMPTOMS:

1. Ear pain
2. Decreased auditory acuity
3. Sensation of fullness in the ear
4. Often present in the setting of an upper respiratory infection
5. May progress to rupture of the tympanic membrane with or without treatment.
6. Erythema and bulging of the tympanic membrane are hallmarks signs of this disease, but these findings are often not useful for diagnosis in the tactical environment.

MANAGEMENT:

1.  Moxifloxacin 400 mg PO QD x 10 days **OR** Zithromax Pack
2.  Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If not effective go to *Pain Management Protocol*

DISPOSITION:

1. For uncomplicated cases, no evacuation is necessary.
2. *Routine* evacuation for complicated cases not responding to therapy or involving a ruptured TM.

Pain Management Protocol

SPECIAL CONSIDERATIONS:
1. Any use of narcotic medications will be sedating and degrade the mission performance of patients
2. Avoid IM or SQ injections of narcotic medications due to the potential for delayed absorption

SIGNS AND SYMPTOMS:

Pain

MANAGEMENT:

1. Start in sequential manner in order to maximize pain control with mission performance

A. Tylenol 1000 mg PO Q 6 H.

B. Non Steroidal Anti-inflammatory drugs

I. Mobic 15 mg po qd prn pain

II. **OR** Motrin 800 mg po q8 hrs prn

C. Narcotic Medications

I. Oral Transmucosal Fentanyl Citrate 800 mcg po over 15 minutes (may repeat dose once)

II. Morphine sulfate 4 mg IV initial dose and then 2 mg IV every 5 minutes up to 10 mg total dose

2. Add Zofran 4 mg IV over 2-3 minutes **OR** Phenergan 25 mg IM/IV/PO for Morphine induced nausea or vomiting

DISPOSITION:
Priority evacuation for any patients with narcotic use.

Pulmonary Embolus

SPECIAL CONSIDERATIONS:

1. Usually preceded by deep venous thrombosis (DVT) with lower leg pain and a history of trauma or long periods in sitting positions (e.g. aircraft flights).
2. Easy to confuse with heart attack so treat patient as having a myocardial infarction.
3. Patient with this condition may also have history of long bone or pelvic fracture.
4. Acute onset, lack of fever and no cough differentiates from high altitude pulmonary edema (HAPE) and pneumonia.
5. Lack of wheezing differentiates from asthma.

SIGNS AND SYMPTOMS:

1. Shortness of breath
2. Localized chest pain (on either side)
3. Tachycardia
4. Tachypnea (rapid breathing)
5. Diaphoresis (sweating)
6. Decreased oxygen saturation on pulse oximetry
7. Full breath sounds with no wheezing
8. Often lower extremity pain, swelling, and tenderness

MANAGEMENT:

1.  Aspirin (ASA) 325 mg – chew to speed absorption
2. IV access
3.  Morphine sulfate 4 mg IV initially, then 2 mg q5-15min as needed for pain relief
4. Oxygen (if available)
5. Pulse oximetry monitoring
6. Treat patient using the *Chest Pain Protocol*.
7. If at altitude greater than 8,000 ft., descend at least 1000 ft. to treat for possible HAPE. See *HAPE Protocol*.

DISPOSITION:
Urgent evacuation

Renal Colic / Kidney Stone

SPECIAL CONSIDERATIONS:
1. May be associated with preceding lower urinary tract obstruction or infection.
2. May proceed to life-threatening systemic infection.

SIGNS AND SYMPTOMS:

1. May have preceding UTI S/S
2. Back pain
3. Flank pain
4. Nausea/vomiting
5. Costovertebral angle tenderness
6. Fever

MANAGEMENT:

1.  Moxifloxacin 400 mg PO QD for 7 days if able to take PO, **OR** Zithromax Pack
2.  Ertapenem 1 gm IV/IM **OR** 3rd generation Cephalosporin Rocephin (ceftriaxone) 1 gm BID IV or IM if unable to take PO or not responding to oral treatment
3.  Tylenol (acetaminophen) 1000 mg PO q6h PRN pain or *Pain Management Protocol*
4.  Zofran (ondansetron) 4 mg IV undiluted administered over 2 to 5 minutes or IM BID for nausea and/ or vomiting for nausea and vomiting **OR** Phenergan 25 mg IM/IV/PO
5. Force PO hydration
6. IV hydration with normal saline (NS) at 250 cc/hr if unable to tolerate PO fluids

DISPOSITION:
Priority evacuation

Seizures

SPECIAL CONSIDERATIONS:

1. May be caused by injury, infection, high fever, alcohol withdrawal, drug use, toxins, and structural abnormalities of the central nervous system (CNS).
2. Normal respirations do not occur during generalized convulsions.
3. Seizures may cause multiple secondary problems including:
   A. Rhabdomyolysis
   B. Lactic acidosis due to prolonged hypoxemia during seizure
   C. Aspiration pneumonia and respiratory distress
4. Diazepam is the medication selected to treat seizures in the tactical setting because it comes pre-mixed, is stable for long periods at room temperature, and works rapidly.

SIGNS AND SYMPTOMS:

1. Generalized seizure
2. +/- H/O previous seizures
3. +/- H/O recent head trauma
4. +/- H/O evidence of CNS infection
5. +/- H/O preceding headaches

MANAGEMENT:

1. Avoid trauma to patient during the seizure.
2.  Valium (diazepam) 5-10 mg IV (inject no more than 5 mg per minute) for ongoing seizures (consider intraosseous (IO) access if needed.) May repeat in 15 minutes for continuing seizures up to maximum dose of 30 mg.
3.  If no IV or IO access, give 10 mg Valium (diazepam) IM initially, and then repeat q 15 min as needed up to a total of 30 mg.
4. Do not attempt to force an object into the mouth to open airway.
5. Open the airway as soon as possible after seizure subsides.
6. Pulse oximetry monitoring
7. Apply oxygen if available and oxygen saturation is below 90%.
8. If seizures are accompanied by fever, consider meningitis and treat per *Meningitis Protocol*.
9. Place either 1 tube Glucose 15 (oral glucose gel) or contents of an MRE sugar packet sublingually to treat for possible hypoglycemia.
10.  Be aware of post-ictal state that follows seizure.

DISPOSITION: *Urgent* evacuation

Sepsis/Septic Shock

SPECIAL CONSIDERATIONS:

1. Sepsis is a form of severe, life-threatening bacterial blood infection caused by an overwhelming bacterial infection.
2. Rapid onset - death may occur within 4-6 hours without antibiotic therapy.
3. **If crystalloid solutions are not available, the use of Hextend or Hespan in sepsis is acceptable in larger volumes than typically used in trauma cases.**

SIGNS AND SYMPTOMS:

1. Hypotension
2. Fever
3. Tachycardia
4. Altered mental status
5. Dyspnea
6. May see skin rash (purpura)

MANAGEMENT:

1. Start an IV (May need intraosseous infusion device - IV may be hard to start in a patient with shock.)
2.  Ertapenem 1 gm IV QD **OR** Rocephin (ceftriaxone) 2 gm IV as soon as IV is started
3. If patient is hypotensive (by blood pressure measurement or absent radial pulse), give 2 liters of normal saline or Ringer's Lactate IV fluid bolus. If normal saline is not available, give 1 liter of Hextend or Hespan.
4.  Epinephrine 0.5 mg (0.5ml of 1:1,000 solution) IM **(DO NOT GIVE IV)** for persistent hypotension after 2 liter bolus of NS or RL, or after 1 liter bolus of Hextend or Hespan.
5. Repeat 2 liter normal saline bolus if required for continued hypotension, then titrate fluids to maintain systolic blood pressure >90 mmHg or palpable radial pulse.
6. Watch for decreased mental status and be prepared to manage airway.

DISPOSITION:
Urgent evacuation

Smoke Inhalation

SPECIAL CONSIDERATIONS:

1. More common after closed-space exposures to fire.
2. Consider possibility of carbon monoxide (CO) poisoning and need for hyperbaric oxygen in all significant cases of smoke inhalation.
3. Normal oxygen saturation by pulse oximetry DOES NOT rule out the possibility of CO poisoning.
4. Consider possibility of airway burns and need for early intubation in the presence of face or neck burns.
5. Consider possibility of other inhaled toxins.

SIGNS AND SYMPTOMS:

1. H/O smoke exposure
2. Burns
3. Coughing
4. Respiratory distress (may be delayed in onset)

MANAGEMENT:

1. Consider the use of early intubation or cricothyroidotomy if significant burns (singed nares, facial burns, etc.) suspected
2.  Albuterol by metered dose inhaler 2 to 4 puffs q4 to 6h
3.  Decadron (dexamethasone) 10 mg IV or IM QD for two days
4. Apply oxygen if available
5. Limit patient exertion if possible.

DISPOSITION:

1. *Urgent* evacuation for respiratory distress.
2. *Priority* evacuation if not in distress but significant inhalation suspected.

Spontaneous Pneumothorax

SPECIAL CONSIDERATIONS:
1. Usually results from anatomic abnormalities of lung, genetic predisposition, or smoking.
2. Consider also: anaphylaxis, pulmonary embolism, high altitude pulmonary edema (HAPE), asthma, and pneumonia.
3. More common in tall, thin individuals

SIGNS AND SYMPTOMS:

1. Often H/O smoking
2. Spontaneous unilateral chest pain
3. Dyspnea – typically mild
4. No wheezing
5. Decreased breath sounds on affected side
6. No leg pain or swelling

MANAGEMENT:

1. Pulse oximetry monitoring
2. Oxygen if available (use oxygen for all suspected spontaneous pneumothoraces - may help speed resolution.)
3. Consider needle decompression for suspected tension pneumothorax.
4. If needle decompression allows for patient improvement, followed by worsening of condition, consider repeat needle decompression.
5. Descend at least 1000 ft. if at altitude and HAPE is a possibility.
6. Monitor respiratory status closely while waiting for evacuation.
7. Consider the need for decompression for high altitude evacuation.

DISPOSITION:
1. *Urgent* evacuation for significant respiratory distress despite therapy.
2. *Priority* evacuation for patients whose respiratory status is stable.

Subungual Hematoma

SPECIAL CONSIDERATIONS:
A collection of blood under a nail: typically occurs after trauma to fingernail or toenail.

SIGNS AND SYMPTOMS:

1. Pain from the affected nail
2. Purplish-black discoloration under the nail

MANAGEMENT:

1. Decompress the nail with a large gauge needle by rotating needle through the nail directly over the discolored area until the underlying blood has been released and the pressure is relieved. Make sure that it is introduced into the affected nail with a gentle but sustained rotating motion.

2. Gentle pressure on the affected nail may help to evacuate more blood.

3.  Tylenol (acetaminophen) 1000 mg PO q6h for relief PRN pain. If no response, follow *Pain Management Protocol.*

4. If a fracture is suspected, consider taping the injured finger or toe to an adjacent toe or finger, or consider splinting the injured digit with either an improvised or a commercial splint.

DISPOSITION:
Evacuation should not be required for this injury if the subungal hematoma is successfully treated.

Testicular Pain

SPECIAL CONSIDERATIONS:
1. The primary concern in testicular pain is differentiating testicular torsion from other causes of testicular pain
2. Testicular torsion is an medical emergency requiring urgent correction to prevent loss of the affected testicle
3. Other common causes of testicular pain include epididymitis and orchitis, infections commonly caused by STDs, as well as hernias and testicular masses

SIGNS AND SYMPTOMS:

Testicular Torsion:

1. Sudden onset testicular pain
2. Usually associated with activity
3. Associated testicular swelling
4. Abnormal position or lie of the affected testicle
5. Symptoms may be increased by testicular elevation
6. Usually associated with pain induced nausea and vomiting

Epididymitis

1. Gradual onset of worsening pain
2. May have fever and/or dysuria
3. Can be also be traumatic

MANAGEMENT:

1. If pain is sudden onset and the testicle is lying abnormally in the scrotum, an attempt to manual detorse the testicle is warranted.
    a. A single attempt to rotate the testicle outward (like opening the pages of a book) should be made
    b. If pain increases, 1 attempt to rotate the opposite direction should be made
    c. Successful detorsion will result in relief of pain
    d. If unsuccessful, treat per pain protocol and evacuate

2. Gradual onset pain with a normal lying testicle
    3. Treat per *Urinary Tract Infection Protocol*.
    4. Treat pain per *Pain Management Protocol*.

DISPOSITION:
1. For testicular torsion that cannot be detorsed, *Urgent* evacuation
2. For testicular torsion that has been successfully detorsed, *Priority* evacuation
3. For other causes of testicular pain, treat cause and consider evacuation if symptoms persist more than 7 days

Urinary Tract Infection

SPECIAL CONSIDERATIONS:
1. More common in females.
2. More common in tactical settings with dehydration and/ or kidney stones.
3. Symptoms may be confused with a sexually transmitted disease (STD). Azithromycin has been added to the treatment regimen to treat for possible STD

SIGNS AND SYMPTOMS:

1. Dysuria
2. Urinary urgency and frequency
3. Cloudy, malodorous, or dark urine may be present
4. Suprapubic discomfort

MANAGEMENT:

1.  Moxifloxacin 400 mg qd x 3 days **AND** Zithromax (azithromycin) 1000 mg one time dose

2.  Tylenol (acetaminophen) 1000 mg q6h PRN pain. If no response, follow *Pain Management Protocol.*

3. If fever, back pain, flank pain, and/or costovertebral angle tenderness develop, suspect kidney infection and go to *Flank Pain Protocol.*

4. Force PO hydration.

DISPOSITION:
1. Usually responds to therapy – evacuation not required if it does
2. *Routine* evacuation for worsening signs and symptoms
3. *Priority* evacuation for pyelonephritis (See *Flank Pain Protocol)*

2006 Tactical Medical Emergency Protocol
Authors/Contributors

U.S. SPECIAL OPERATIONS COMMAND (USSOCOM)

COL Warner D. ("Rocky") Farr
Command Surgeon

HMCM Glenn Mercer
Senior Enlisted Medical Advisor (SEMA)

CPT Steven L. Briggs, SP, APA, MPAS-C
Command Physician Assistant
Chief, Medical Education and Training

USSOCOM Component Surgeons

COL Joe Caravalho	USASOC
Col Timothy Jex	AFSOC
CAPT Jay Sourbeer	NAVSPECWARCOM
CAPT Stephen McCartney	MARSOC

USSOCOM Curriculum Examination Board

JF Rick Hammesfahr, MD,
Chairman - Curriculum and Evaluation Board
Director, The Center for Orthopaedics and Sports Medicine
Marietta, Ga

Col Charles W. Beadling, USAF, MC, CFS, MD, FAAFP
Director, Academic Division/Assistant Professor
Department of Military and Emergency Medicine
Uniformed Services University of the Health Sciences

Bryan E. Bledsoe, DO, FACEP
Adjunct Professor of Emergency Medicine
The George Washington University Medical Center

LTC Brian Burlingame, MD
Chief, Dept. of Surgery
Womack Army Medical Center
Fort Bragg, N.C.

MSG Alton M. Chesne, USA, 18D/18Z NREMT-P, ACLS-I, PHTLS-I
Combat Applications Group

SFC Guy M. Clark, USA, 18D, NREMT-P
SFG (A) C/3/20

SMSgt Ramon Colon-Lopez, PJ, USAF, NREMT-P
Director of Training
USAF PJ/CRO School

SFC Ricardo A. Flores-Artola, USA, 91-W, Ranger, NREMT-P
DMRTI, Combat Casualty Care Course

MSgt Barry Frasier, USAF, NREMT-P, IDMT
Flight Chief, Aeromedical Services
24 STS

LtCol Gary J. Geracci, USAF, DC
Dept of Oral & Maxillofacial Surgery
Offutt AFB, NE

Robert W. Hesse, RN, NREMT-P, I/C
Clinical Manager, PHI Air Medical Group

LCDR Mathew Hickey, USN, MD
Senior Medical Officer
Naval Special Warfare Group Four

LTC Troy R Johnson, MD
Deputy Commander for Clinical Services
USA MEDDAC, Fort Drum NY

Robert Kacprowicz, MD MAJ, USAF, MC
Medical Director
USAF PJ/CRO School

SMSgt Brian Kearney, USAF
Chem/Bio Specialist
Research Scientist, USAMRIID
Adjunct Professor of Chemistry, Shepherd College

Gary W. Latson, CDR, MC, USNR
Senior Medical Officer
Navy Experimental Diving Unit

Joseph Legan, MD
LtCol USAF, MC, SFS
Assistant Professor, Dept of Surgery
Uniformed Services University of the
Health Sciences

LCDR James Muccdarone, MD
NSWG 2
Little Creek, VA

HMCS(SEAL/IDC) Rich Moore
Force Medical Training & Readiness
Naval Special Warfare Command

MAJ(P) Dan “Trey” Mosely, MD
Walter Reed Army Medical Center

LTC Robert L. Mott,USA, MD, MPH
Director, Division of Preventive Medicine
Walter Reed Army Institute of Research
Eleanor A. O'Rangers, Pharm. D.
Director of Medical Affairs
Crestor US Brand Team
AstraZeneca LP

LTC Andre M. Pennardt, MD, FACEP
Group Surgeon
10th Special Forces Group (Airborne)
Adjunct Assistant Professor of Military and Emergency Medicine
Uniformed Services University of the Health Sciences

Daniel J. Schissel MD
LTC USA MC FS DMO
Chief Dermatology USAM

John Todaro, REMT-P, RN, TNS
Director /COO
Emergency Medicine Learning & Resource Center, Orlando, Florida

Other Contributors

Eric C. Bruno, MAJ, MC, Attending Emergency Physician
Lehigh Valley Hospital and Health Network
Allentown, PA

Additional Contributors to Earlier Editions

CAPT Frank Butler, USN, MD
USSOCOM Command Surgeon

Lt Col Mike Curriston, USAF, MD
Air Force Special Operations Command
Director of Training

COL Tom Deal, USA, MD
Joint Special Operations Command
Command Surgeon

CAPT Bob Hoyt, USN
Department of Internal Medicine
Naval Hospital, Pensacola FL

Guillermo J. Pierluisi, MD, MPH
Associate Professor
Department of Emergency Medicine
Medical College of Georgia

John P. Santamaria, MD
Associate Professor of Pediatrics at USF

Richard Schwartz, MD
Chairman, Department of Emergency Medicine
Medical College of Georgia

LTC Ian Wedmore, MD
Department of Emergency Medicine
Madigan Army Medical Center
HMCM (SEAL) Gary E. Welt, USN, SOIDC, NREMT-P
Command Senior Enlisted Medical Advisor

CAPT Andy Woods, USN, MD
Naval Special Warfare Command
Command Surgeon

Col Daniel Wyman, USAF, MD
Air Force Special Operations Command
Command Surgeon

Joint Special Operations

Tactical Medical Emergency Protocol Drug List

December 4, 2006

USSOCOM OFFICE OF THE COMMAND SURGEON
DEPARTMENT OF EMERGENCY MEDICAL SERVICES AND PUBLIC HEALTH
7701 Tampa Point Boulevard
MacDill Air Force Base, FL 33621
\(813) 828-5442

PREFACE

- ► The following is a list of medications mentioned in the Tactical Medical Emergency Protocols. However, most of the TMEPs have a preferred medication recommendation and then an alternate one. All of these recommendations are listed here.
- ► The CEB and RB recognize that a "one size fits all" approach to a strict formulary is unrealistic due to medication availability, mission requirements, etc. The list of medications is designed to guide the ATP in medication selection.
- ► For specific order of the recommended medications and specific TMEP application of the medications, **CHECK the specific TME Protocol**.
- ► Antibiotics: Always check potential drug allergies. If allergic to one class of medications, use alternate class of medications (Cephalosporins/Penicillins, Tetracyclines, Quinolones, Macrolides).
- ► **Unless specifically noted, the drug dosages listed are for an adult.**

Acetaminophen – See Tylenol (Page A-32)

Acetazolamide – See Diamox (Page A-7)

Actiq Lozenge – See Oral Fentanyl (Page A-26)

Adrenalin – See Epinephrine (Page A-11)

Afrin Nasal Spray (Oxymetazline HCl)

Description: Vasoconstrictor (decongestant)

Indications:

Use as an adjunct to Valsalva maneuver to clear ears and sinuses during compression and decompression.

Contraindications:

Severe damage to tympanic membrane/sinuses from barotrauma.

Dose:

Spray into each nostril 2 times, twice daily. Not to exceed 3 consecutive days due to rebound congestion

NOTE: Do not tilt head backwards while spraying.

Side-effects:

Sneezing

Burning and stinging of nasal mucosa

Adverse Reactions:

Rhinitis and rebound congestion

TMEP Use

(See TMEP 24) **EPISTAXIS PROTOCOL**

Albuterol Inhaler (Ventolin, Proventil)

Description: Inhaled beta-adrenergic agonist; relaxes bronchial smooth muscle

Indications:

Relief of bronchospasm and prevention/ treatment of exercise-induced bronchospasm

Contraindications:

Known hypersensitivity to Albuterol

Adult Dosage:

2 inhalations every 4 to 6 hours. Spray 4 times into the air if using for the first time or after >4 weeks of storage

Pediatric Dosage:

If > 4yrs old, 1 inhalation every 4 to 6 hours may be sufficient.

Side-effects:

Similar in nature to reaction to other sympathomimetic agents
Tremor
Nausea
Nervousness
Palpitations

Adverse reactions:

Hypertension
Angina
Vertigo
CNS stimulation
Sleeplessness

TMEP Use:

Asthma (Reactive Airway Disease) Protocol (See TMEP 12)
Bronchitis/Pneumonia Protocol (See TMEP 14)
Cough Protocol (See TMEP 20)
Smoke Inhalation Protocol (See TMEP 46

Aspirin (ASA)

Description: Analgesic, antipyretic, anti-inflammatory, anti-platelet effect.

Indications: For the temporary relief of: Mild to moderate pain, fever.

MI Prophylaxis: Reduces the risk of death and/or nonfatal myocardial infarction in patients with a previous infarction or unstable angina pectoris.

Transient Ischemic Attacks: Reducing the risk of recurrent transient ischemic attacks (TIAs) or stroke in patients who have transient ischemia of the brain due to fibrin emboli.

Contraindications:

Hypersensitivity to aspirin
Hypersensitivity to nonsteroidal anti-inflammatory agents (NSAID)
History of gastrointestinal bleeding
Patients with bleeding disorders (e.g., hemophilia).
Patient age < 12 years old

Adult Dose:

Adults: 325mg. One or 2 tablets/caplets with water. May be repeated every 4 hours as necessary up to 12 tablets/caplets a day or as directed by a doctor.

Pediatric Dose:

> 12 years and over: 1 or 2 tablets/caplets with water. May be repeated every 4 hours as necessary up to 12 tablets/caplets a day or as directed by a doctor.

<12 years old: *Do not give to children under 12 unless directed by a doctor.*

Side-effects:

Gastrointestinal symptoms
Gastrointestinal bleeding
Stomach pain
Heartburn
Nausea
Vomiting

Adverse Reactions:

Interacts with NSAIDs, Coumadin, and Heparin

TMEP Use: Chest Pain of Possible Cardiac Origin Protocol (See TMEP 16)
Deep Venous Thrombosis Protocol (See TMEP 22)
Pulmonary Embolus Protocol (See TMEP 42)

Atovaquone 250mg/ proguanil 100mg - See Malarone®

Avelox – See Moxafloxacin

Azithromycin – See Zithromax, Z-Pak®

Bactroban (Mupirocin ointment 2%)

Description: Topical antibacterial

Indications:

Impetigo, Topical Skin Infection

Contraindications:

Should not be used with open wounds

Dosage:

Clean affected area, apply small amount of antibiotic on the area 1 to 3 times/day. The affected area may be covered by gauze or a sterile bandage

Pediatric Dose:

Safety in children has been established in ages 2 to 16 yrs. Pediatric dosing like adult dosing

Side-effects:

Burning, stinging, pain, itching at application site

Adverse Reactions:

Nausea
Dry skin
Tenderness
Swelling
Contact dermatitis
Increased exudate (rare)
Systemic reactions (rare)
Preparation procedure/ Other notes
For external use only
Avoid eyes and mucosal membranes
If no improvement in 3 to 5 days, consider alternative therapy

TMEP Use:

Epistaxis Protocol (See TMEP 24)
Ingrown Toenail Protocol (See TMEP 34)

Benadryl (Diphenhydramine HCl)

Description: Antihistamine. Prevents (but does not reverse) histamine-mediated responses.

Indications:

Mild to moderate allergic symptoms and/or allergic reactions
Dystonic reaction

Contraindications:

Asthma
Pregnant or lactating females

Adult Dose:

25 to 50mg IM / IV / PO QID Max dose 400mg/day.

Pediatric Dose:

(Children < 12 years): 5 mg/Kg/day in divided doses QID May be given PO, IM or IV

Side-effects:

Sedation
Blurred vision
Nausea
Vomiting
Diarrhea
Headache

Adverse Reactions:

Insomnia
Vertigo
Palpitations
Dry mouth
Constipation
Dysuria
Urine retention

TMEP Use

Allergic Rhinitis/Hay Fever/Cold Like Symptoms Protocol (See TMEP 10)
Anaphylactic Reaction Protocol (See TMEP 11)

Bisacodyl – See Dulcolax (See Section A-10)

Cephalexin – See Keflex (See Section A-16)

Ceftriaxone Sodium - Rocephin

Cephalosporins – General Antimicrobial Spectrum

1st Generation: Gram positive (including Staph aureus); basic gram negative coverage.

Examples: cefazolin, cephalexin, cefadroxil

2nd Generation: Diminished Staph aureus, improved gram negative coverage compared to 1st generation; some with anaerobic coverage.

Examples: cefotetan, cefoxitin, cefuroxime

3rd Generation: Further diminished Staph aureus; further improved gram negative coverage compared to 1st and 2nd generation; some with Pseudomonas coverage & diminished gram positive coverage.

*Examples: ceftriaxone **(see Rocephin)**, cefotaxime, cefpodoxime, cefixime, cefoperazone.*

4th Generation: Same as 3rd generation plus coverage against Pseudomonas.

Example: cefepime

Chloroquine Phosphate

Indications:

Malaria due to *P. vivax, P. malariae, P. ovale*, and susceptible strains of *P. falciparum.*

Dosage:

The dosage of chloroquine phosphate is often expressed in terms of equivalent chloroquine base. Each 500mg tablet of chloroquine phosphate contains the equivalent of 300mg chloroquine base.

Adult Dose:

Prophylaxis: 500mg (= 300mg base) on the same day of each week. Initiate therapy 1 to 2 weeks prior to departure to endemic area.
Dose must be administered on same day of week
Continue prophylaxis for 4 additional weeks upon return from endemic area

Treatment: 1gm PO x1 then 500mg PO daily x 3 days starting 6 hours after first dose

Pediatric Dose: The weekly suppressive dosage is 5mg calculated as base, per kg of body weight, but should not exceed the adult dose regardless of weight.

Precautions:

Liver disease, blood disorders, psoriasis, a certain metabolic disease (glucose-6-phosphate dehydrogenase-G6PD deficiency), hearing problems, seizures.

Side-effects:

Nausea
Vomiting
Stomach upset
Cramps
Loss of appetite
Diarrhea
Blurred vision
Trouble seeing at night or problems focusing clearly
Easy bleeding or bruising.

Warnings:

It has been found that certain strains of *P. falciparum* have become resistant to chloroquine and hydroxychloroquine. Chloroquine resistance is widespread and, at present, is particularly prominent in various parts of the world including sub-Saharan Africa, Southeast Asia, the Indian subcontinent, and over large portions of South America, including the Amazon basin.[1]

Before using chloroquine for prophylaxis, it should be ascertained whether chloroquine is appropriate for use in the region to be visited by the traveler. Chloroquine should not be used for treatment of P. *falciparum* infections acquired in areas of Chloroquine resistance or malaria occurring in patients where Chloroquine prophylaxis has failed. Patients infected with a resistant strain of plasmodia, as shown by the fact that normally adequate doses have failed to prevent or cure clinical malaria or parasitemia, should be treated with another form of antimalarial therapy.

Drug Interactions:

Ampicillin
, Antacids
Cimetidine
Cyclosporine
Kaolin
Magnesium trisilicate.

TMEP Use:

Malaria Protocol (See TMEP 37)

Combivir

TMEP Use:

HIV Post Exposure Prophylaxis Protocol (See TMEP 31)

Cortisporin Otic Drops

TMEP Use:

Otitis Externa (See TMEP 39)

Decadron (Dexamethasone)

Description: Parenteral steroid (glucocorticoid)

Indications:

Emergency treatment of AMS, HACE, HAPE, when tactical conditions preclude descent or acclimatization.

Use of Decadron ¯symptoms of AMS, but does not speed acclimatization.

Use of Decadron does not preclude the need for an emergency descent. (Administer Decadron every 6 hours until descent is accomplished).

Contraindications: Use caution in patients with a history of:

Diabetes
Hypertension
Ulcers

Dosage: 4mg IV / IM / PO every 6 hours

Side-effects:

Delayed wound healing
Acne
Various skin eruptions
Edema

Adverse Effects: Usually dose related.

Psychotic behavior
Congestive Heart Failure
Hypertension
Cataracts
Glaucoma
Hypokalemia
Hyperglycemia
Carbohydrate intolerance

TMEP Use:

Acute Head and Neck Infection, Including Epiglottitis, Protocol (See TMEP 8)
Acute Mountain Sickness Protocol (See TMEP 9)
Anaphylactic Reaction Protocol (See TMEP 11)
Asthma (Reactive Airway Disease) Protocol (See TMEP 12)
Contact Dermatitis (Poison Ivy and Oak) Protocol (See TMEP 18)
High Altitude Cerebral Edema Protocol (See TMEP 29)
High Altitude Pulmonary Edema Protocol (See TMEP 30)
Meningitis Protocol (See TMEP 38)
Smoke Inhalation Protocol (See TMEP 46)

Dexamethasone - See Decadron (See Previous Page)

Dextrose – See Glutose

Diamox (Acetazolamide)

Description: Non-diuretic antihypertensive (carbonic anhydrase inhibitor)

Indications:

Prevention and/or amelioration of symptoms associated with acute mountain sickness in climbers attempting rapid ascent and/or in those who are very susceptible to acute mountain sickness despite gradual ascent. For maximum benefit begin regi men 7 days prior to ascent. Of minimal benefit in Rx of AMS, HACE, or HAPE

Contraindications: Sulfa allergy.

Dosage:

125 to 250mg b.i.d., 24 hours prior to ascent, continuing for 48 hours after ascent. Prevention and/or amelioration benefits are nominal once ascent has commenced. If the 500mg sustained release tablet is used, dose is 500mg every 24 hours.

Side-effects:

Paresthesia in extremities
Hearing dysfunction/tinnitus

Loss of appetite
Taste alterations
Nausea
Vomiting
Diarrhea
Polyuria
Drowsiness
Confusion.

Warning:

NOTE: Use of Diamox results in a significant alteration in taste. Carbonated beverages will have seriously altered taste, and may be undrinkable.

Increased fluid intake is required with use of Diamox: Although Diamox is not in the general drug class of "diuretics", it has diuretic effects and can result in serious dehydration unless great care is taken to maintain proper hydration.

Adverse Reactions:

Transient myopia (usually resolves w/ DC of drug)
Urticaria
Melena
Hematuria
Flaccid paralysis
Photosensitivity
Convulsions

TMEP Use:

Acute Mountain Sickness Protocol (See TMEP 9)
High Altitude Cerebral Edema Protocol (See TMEP 29)

Diazepam – See Valium (See Section A-33)

Diflucan (Fluconazole)

Description: Synthetic triazole antifungal agent

Indications:

Vaginal Candidiasis (vaginal yeast infections due to *Candida*).
Oropharyngeal and esophageal candidiasis.
Fungal skin infections

Contraindications:

Hypersensitivity to fluconazole.

Adult Dose:

Skin Infection: 150mg, 1 pill per week x 4 weeks
Single Dose: Vaginal candidiasis: The recommended dosage of fluconazole for vaginal candidiasis is 150mg as a single oral dose.
Oropharyngeal Candidiasis: The recommended dosage of fluconazole for oropharyngeal candidiasis is 200mg on the first day, followed by 100mg once daily. Clinical evidence of oropharyngeal candidiasis generally resolves within several days, but treatment should be continued for at least 2 weeks to decrease the likelihood of relapse.

Side-effects/Adverse Reactions:

Dermatologic: Exfoliative skin disorders including Stevens-Johnson Syndrome and toxic epidermal necrosis.

TMEP Use:

Fungal Skin Infection Protocol (See TMEP 26)

Diphenhydramine HCl - See Benadryl (See Section A-4)

Doxycycline

Description: Tetracycline antibiotic

Indications:

Rocky Mountain Spotted Fever
Typhus
Q Fever
Rickettsial Fever
Mycoplasma Pneumonia
H. flu
Klebsiella respiratory infections
Psittacosis
Uncomplicated urethritis
Chancroid
Leptospirosis
Malaria prophylaxis

Contraindications:

Known allergy to this drug or class of drugs
If a patient has an allergy to another tetracycline, proceed with caution as cross-allergy is extremely common.
Should not be used for streptococcal disease unless organism has been shown to be susceptible
Should not be used for any type of staphylococcal infection

Adult Dose:

100mg PO BID for a variable period depending on the diagnosis

Pediatric Dose:

Generally, should not be used in children < 8 yrs (except for anthrax) unless other drugs are not available or are contraindicated. ***Tetracyclines can impair bone formation (reversible with discontinuation) and can cause permanent tooth discoloration (especially with long-term use).***

Side-effects:

Photosensitivity (potential for excessive sunburn)
Dizziness
Headache
Anorexia
Nausea
Vomiting
Diarrhea (rare)

Adverse reactions:

Pseudotumor cerebri (benign intracranial hypertension); usually manifested as blurred vision and headache; reversible with discontinuation
Esophageal ulcerations (make sure to drink plenty of water when swallowing capsules)
Elevated liver transaminases
Dermatologic - a variety of reactions have been reported, including Stevens-Johnson Syndrome
Vaginal yeast infections

Preparation procedure/ Other notes:

Take on an empty stomach. Meals, dairy products, iron-containing products and antacids can impair absorption.
Caution patients experiencing CNS symptoms about driving and operating hazardous machinery during therapy.
Concurrent use of tetracyclines may render oral contraceptives less effective; use alternate source of contraception during therapy.

TMEP Use:

Gastroenteritis Protocol (See TMEP 27)
Malaria Protocol (See TMEP 37)

Dulcolax (Bisacodyl)

Description: Stimulant laxative

Indications:

Used to treat constipation or to clean out the intestinal tract before bowel examinations or bowel surgery.

Contraindications:

Ileus
Intestinal obstruction
Acute surgical abdominal conditions like acute appendicitis, acute inflammatory bowel diseases
Severe dehydration.
Known hypersensitivity to substances of the triarylmethane group.

Adverse Reactions:

Rarely, abdominal discomfort and diarrhea have been reported.

Adult Dose:

Swallow the tablets whole with a full glass of water or juice. Do not crush or chew the tablets. The tablets should work within 6 to 10 hours.
5 to 15mg.

Pediatric Dose:

6 to 12 years: 5mg, taken at bedtime or in the morning before breakfast to produce evacuation approximately 8 hours later.

Preparation Procedure/Other Notes:

Tablets have a special coating and therefore should not be taken together with milk or antacids.
Tablets should be swallowed whole with adequate fluid.

TMEP Use

Constipation/Fecal Impaction Protocol (See TMEP 17)

Epinephrine (Adrenaline)

Description: Alpha and beta adrenergic sympathomimetic. First-line drug for anaphylaxis (See ACLS drugs for cardiac therapy). Causes bronchodilatation, vasoconstriction, increases blood pressure. Decreases edema/swelling due to allergic reactions.

NOTE:

1:1,000 dilution epinephrine (1mg in 1cc) is standard pararescue issue.
1:10,000 dilution (1mg in 10cc) is the standard 'Cardiac' dosage form for IV use.
1:1,000 epinephrine can be diluted to the 1:10,000 form by putting 1cc of 1:1,000 epinephrine (1mg epinephrine) in 9cc's of normal saline (total volume of 10cc).

Indications: Anaphylaxis
Allergic reactions (mild/moderate/severe)
Asthma

Contraindications: 1:1,000 Epinephrine is NOT given IV.

Use caution in patients with a history of heart disease or over the age of 40.
Do not inject Epinephrine (or solutions containing Epi) into/near the fingers, toes, nose, ears or penis. Intense vasoconstriction may cause necrosis.

Adult Dose (Epinephrine):

Anaphylaxis: 0.3-0.5mg (3-5cc of 1:10,000 dilution) IV or 0.3-0.5mg (0.3-0.5cc of 1:1,000 dilution) IM
Allergic reaction: 0.3-0.5mg (0.3-0.5cc of 1:1,000 dilution) SubQ or IM
Asthma: 0.3-0.5mg (0.3-0.5cc of 1:1,000 dilution) SubQ or IM

Pediatric Dose: *0.01mg/Kg SubQ or IM. Not to exceed 0.5mg*

Side-effects:

Cardiac arrhythmias
Ventricular Tachycardia
Ventricular Fibrillation

Angina
Hypertension
BP
Nausea
Vomiting
Vasoconstriction

Adverse Reactions:

Uncontrolled effects on myocardium & arterial system

TMEP Use

Anaphylactic Reaction Protocol (See TMEP 11)
Asthma (Reactive Airway Disease) Protocol (See TMEP 12)
Sepsis/Septic Shock Protocol (See TMEP 45)

Ertapenem IV (Invanz®)

Description: Carbapenem antibiotic

Indications:

Complicated intra-abdominal infections
Complicated skin infections
Pneumonia
Complicated UTI, including pyelonephritis
Acute pelvic infections
Drug of choice for penetrating battlefield trauma

Contraindications:

Hypersensitivity to ertapenem
Penicillin allergy with documented severe reaction to PCN
Hypersensitivity to other carbapenem antibiotics
Anaphylactic reactions to other beta-lactam antibiotics
IM: hypersensivity to lidocaine or other anesthetics of amide-type

Adult Dose:

1gm daily
May be administered IV up to 14 days or IM injection for up to 7 days
For IV administration, infuse over 30 minutes

Pediatric Dose:

Not approved in patients < 18 yrs

Side-effects:

Diarrhea
Infused vein phlebitis/thrombophlebitis
Nausea/ vomiting
Headache
Vaginitis

Adverse Reactions:

Seizures

Preparation Procedure/ Other Notes:

Visually inspect any solution of ertapenem for particulate matter and discoloration prior to use. when possible. Solutions range in color from colorless to pale yellow. Variations in color do not affect potecy of the drug.
IV administration- must be reconstituted prior to administration.
Do not mix or co-infuse with other medications.
Do not use diluents containing dextrose.
Reconstitute the contents of a 1gm vial of ertapenem with 10 ml of 0.9% NaCl, or bacteriostatic water for injection.

Shake well to dissolve, and immediately transfer contents to 50ml of 0.9% NaCl.
Complete infusion within 6 hrs of reconstitution.
IM administration - must be reconstituted prior to administration.
Reconstitute the contents of a 1gm vial of ertapenem with 3.2ml of 1% lidocaine HCl injection (without epinephrine). Shake vial thoroughly to form solution.
Immediately withdraw the contents of the vial, and administer by deep IM injection into a large muscle mass (such as the gluteal muscles or lateral part of the thigh).
Use the reconstituted IM solution within 1 hr after preparation**. DO NOT ADMINISTER THE RECONSTITUTED IM SOLUTION IV.**

TMEP Use:

Acute Abdominal Pain Protocol (See TMEP 4)
Bronchitis/Pneumonia (Severe) Protocol (See TMEP 14)
Cellulitis Protocol (See TMEP 15)
Joint Infection Protocol (See TMEP 35)
Meningitis Protocol (See TMEP 38)
Renal Colic/Kidney Stone Protocol (See TMEP 43)
Sepsis/Septic Shock Protocol (See TMEP 45)

Fentanyl – See Oral Fentanyl (See TMEP A-26)

Flagyl (Metronidazole)

Description: Nitroimidazole antibiotic
Indications: Gastroenteritis presumed due to Giardia
Contraindications:

Hypersensivity to any component of product, or other nitroimidazole derivatives.
Pregnancy (first trimester in patients with Trichomoniasis).
Administer with caution to patients with CNS diseases.
Use with caution in patients with history of blood dyscrasias.

Adult Dose:

Amebic Dysentery – 750mg PO TID x 5-10 days
Trichomoniasis – 2gm PO x 1 dose; OR 250mg PO TID x 7 days
Giardia – 250mg PO TID x 5 -7 days
Severe anaerobic infections – 1gm IV, the 500mg IV q 6 h

Pediatric Dose:

Safety and efficacy have not been established, except for amebiasis. 35 to 50mg/kg TID for 10 days. Newborns exhibit a reduced capacity to eliminate the drug.

Side-effects:

Disulfiram-like reaction including flushing, palpitations, tachycardia, nausea, vomiting may occur with concomitant ethanol ingestion. Refrain from ethanol during therapy and ≥1 to 3 days afterward.

Adverse reactions:

Seizures
Peripheral neuropathy (numbness or parethesia of extremity)
Patients with undiagnosed candidiasis may present more prominent symptoms during therapy; treat with candicidal agent.

TMEP Use:

Gastroenteritis Protocol (See TMEP 27)

Fluroquinolones – See Quinolones, Moxafloxacin, Gatifloxacin, Levofloxacin (See Section A-29)

Fluconazole – See Diflucan (See Section A-8)

Gatifloxacin 0.3% ophthalmic liquid (Zymar®)

Description: Ocular fluoroquinolone

Contraindications:

Hypersensitivity to any component of product

Adult Dose:

Days 1 and 2: instill 1 drop in affected eye(s) every 2 hrs while awake, up to 8 times/day
Days 3 to 7: Instill 1 drop in affected eye(s) up to 4 times/day while awake

Pediatric Dose:

Safety and efficacy in infants < 1 year not established
Pediatric dosing like adult dosing

Side-effects:

Upon instillation, may cause temporary blurring of vision or stinging. If stinging, burning, or itching becomes pronounced, or redness, irritation, swelling, decreasing vision or pain persists or worsens, discontinue and consider alternative therapy.
Lid margin crusting, white crystalline precipitates and foreign body sensation in the eye have been reported.
Bad/bitter taste in mouth
Nausea

Adverse reactions:

Discontinue at first sign of skin rash or other allergic reaction.
Corneal staining
Tearing and photophobia

Preparation Procedure/ Other Notes:

To instill in eye, tilt head back, place medication in conjunctival sac and close eye(s). Apply light finger pressure on lacrimal sac for 1 minute following instillation. To avoid bottle contamination, do not touch tip of container to any surface. Replace cap after use.
In general, contact lenses should not be worn during therapy

TMEP Use:

Corneal Abrasion, Corneal Ulcer, Conjunctivitis Protocol (See TMEP 19)
Otis Externa Protocol (See TMEP 39)

Glucose – See Glutose (See Next Page)

Glutose (Dextrose, glucose)

Description: Carbohydrate

Indications: Altered mental status caused by hypoglycemia defined as;

Adults: Diabetics = fingerstick blood glucose analysis less than 110mg/dL
Non-diabetics = fingerstick blood glucose analysis less than 80mg/dL
Children: Diabetics = fingerstick blood glucose analysis less than 90mg/dL
Non-diabetics = fingerstick blood glucose analysis less than 60mg/dL

Contraindications:

Absent gag reflex
Patients who are unable to protect their own airway
Patients who are unable to swallow

Adult Dose:

Full tube given by mouth in small doses (25 to 50gm) - standing order

Pediatric Dose:

0.5gm/kg in small doses - standing order

Drug Action:

Increases blood glucose level

Onset:

1 minute

Duration:
Depends on the degree of hypoglycemia
Precautions:
Assure gag reflex is present
Side-effects:
Aspiration
TMEP Use:
Acute Behavioral Changes Protocol (See TMEP 6)
Loss of Consciousness (without seizures) Protocol (See TMEP 36)
Seizures Protocol (See TMEP 44)

Hespan (Hetastarch in NaCl) Plasma Volume Expander (Artificial Colloid)
Hextend (Hetastarch in Lactated Electrolyte Solution)
Description: Plasma Volume Expander (Artificial Colloid). Both Hespan and the newer product Hextend are artificial colloids and are used to expand the plasma volume. The major advantage over crystalloids is that these products give more volume expansion for a longer period of time for the same infused volume. These products are not blood or plasma replacements, they have no oxygen carrying capacity, and they have no coagulation properties**. These products should not be used to treat dehydrated patients.**
Indications:
Treatment of shock secondary to hemorrhage.
Do not give more than 1 liter (1000cc) of Hespan or Hextend to any casualty.
Contraindications:
Known bleeding disorders or uncontrolled hemorrhage
CHF
Renal impairment
Not for use in children under 12 years
Dehydration
Use with caution in pregnancy.
Dosage:
Patient in shock, bleeding not controlled: hold fluid and control bleeding.
Patient in shock, bleeding controlled: start 500cc of Hespan/Hextend IV, check for improvement in BP (titrate to SBP of 85) or improved mentation. Hold further fluid when either improvement point is met.
Patient still in shock after first 500cc of Hespan/Hextend: start second 500cc bag and titrate till improvement.
Side-effects:
Nausea/vomiting
Peripheral and facial edema
Urticaria
Flushing chills
Adverse Reactions:
Severe anaphylaxis (rare)

Ibuprofen – See Motrin (See Section A-22)

Imodium (Loperamide HCl)
Description: Antidiarrheal (opioid)
Indications:
Treatment of acute diarrhea. For use in acute, non-invasive diarrhea only.
Refer to medical emergencies if blood and/or mucus are present in stool, or diarrhea is associated with fever (infectious diarrhea).

Contraindications:

Acute dysentery.
Not for use in children < 12 y.o.

Dosage:

2 capsules (4mg) first dose, then 1 capsule (2mg) after every unformed stool, not to exceed 10mg (5 capsules) in 24 hours. Use only if control of diarrhea is critical for continued operations.

Side-effects:

Abdominal pain/distention
Nausea
Vomiting
Severe constipation
Drowsiness
Dizziness.

Adverse Reactions:

Hypersensitivity

TMEP Use:

Gastroenteritis Protocol (See TMEP 27)

Invanz® - See Ertapenem IV (See Section A-12)

Keflex (Cephalexin)

Description: Broad spectrum bactericidal oral antibiotic (1st generation cephalosporin) effective against gram positive and basic gram negative organisms.

Indications:

Infections of the respiratory tract, genitourinary tract, and soft tissue infections.

Contraindications:

Use caution in patients with a history of Penicillin allergy.
Allergy to Cephalosporin class of drugs
Hepatic dysfunction
Liver dysfunction

Adult Dose:

250mg to 1gm PO q. 6hrs.

Pediatric Dose:

6 to 12mg/Kg PO q6h.

Side-effects:

Dizziness
Headache
Malaise
Nausea
Vomiting
Diarrhea
Urticaria

Adverse Reaction:

Neutropenia
Eosinophilia
Anemia
Parethesias
Abdominal cramps
Skin disorders

TMEP Use:

Acute Dental Pain (See TMEP 7)

Larium – see Mefloquine (See Section A-20)

Lidocaine HCL (Xylocaine)

Description: Local anesthestic, See ACLS drugs for cardiac therapy.

CAUTION: Some lidocaine solutions contain 1:10,000 epinephrine. This causes intense vasoconstriction, and prolongs the duration of the anesthesia. These solutions are identified by a red label or red lettering on the label. **DO NOT use solutions containing epinephrine on or near the fingers, toes, nose, ears or penis.**

Indications:

Local anesthetic: Suturing, debridement, nerve blocks, thoracostomy or other similar procedures. Duration of anesthesia is 30 to 60 minutes.

Cardiac Use: Use ACLS Protocols

Dose (Local anesthesia): To desired effect. Maximum single adult dose is 4.5mg/Kg or 300mg (15cc's of the 2% solution contains 300mg lidocaine).

NOTE 1: This is a different max dose than with IV lidocaine for ACLS use.

NOTE 2: 2% lidocaine contains 20 mg of lidocaine per cc. Diluting 2% lidocaine 1:1 with normal saline gives a 1% solution (10mg per cc) that is just as effective as the 2% solution.

Contraindications:

2nd degree, 3rd degree AV block
Hypotension
Stokes-Adams Syndrome

Side-effects:

Slurred speech
Altered mental status
Tinnitus
Edema

Adverse Reactions:

Dermatologic reactions
Status asthmaticus
Anaphylaxis
Seizures

TMEP Use:

Back Pain (Acute, Musculoskeletal, Severe) Protocol (See TMEP 13)
Cutaneous Abscess Protocol (See TMEP 21)
Ingrown Toenail Protocol (See TMEP 34)

Loperamide HCl – See Imodium (See Section A-16)

Macrolide Class of Antibiotics – See Azithromycin (Z-Pak®) (See Section A-35)

Malarone (Atovaquone 250mg/ proguanil 100mg)

Description: Antimalarial

Indications:

Prophylaxis and treatment of *Plasmodium falciparum malaria*

Contraindications:

Hypersensitivity to atovaquone, proguanil
Prophylaxis in patients with severe renal impairment (Cr CL < 30mL/min) unless potential benefits outweigh risks of non-treatment (progaunil accumulates in severe renal failure)

Adult Dose:

There are pediatric tablets as well as adult tablets.

Prophylaxis:

Start treatment 1 or 2 days prior to entering malaria endemic area and continue daily during the stay and for 7 days after return.

1 tablet (adult strength) daily

Treatment:

4 tablets (adult strength; total daily dose atovaquone 1gm/ 400mg proguanil) as a single daily dose for 3 consecutive days.

Pediatric Dosage: *There are pediatric tablets as well as adult tablets*

Tablets may be crushed and mixed with condensed milk just prior to administration for those having difficulty in swallowing tablets.

Prophylaxis dosing based on body weight

Safety and efficacy for prophylaxis have been established for children >11kg.

Dosage of atovaquone/proguanil in prevention of malaria in pediatric patients

Weight (kg)	***Atovaquone/proguanil total daily dose***	***Dosage regimen:***
11 to 20	*62.5mg/ 25mg*	*1 pediatric tablet daily*
21 to 30	*125 mg/ 50mg*	*2 pediatric tablets as a single daily dose*
31 to 40	*187.5 mg/75mg*	*3 pediatric tablets as a single daily dose*
>40	*250 mg/ 100mg*	*1 tablet (adult strength) as a single daily dose*

Treatment dosing based on body weight

Safety and efficacy for treatment have been established for children > 5kg.

Dosage of atovaquone/proguanil in treatment of malaria in pediatric patients

Weight (kg)	***Atovaquone/proguanil total daily dose***	***Dosage regimen***
5 to 8	*125mg/50mg*	*2 tablets (pediatric strength) daily for 3 consecutive days*
9 to 10	*187.5mg/75mg*	*3 tablets (pediatric strength) daily for 3 consecutive days*
11 to 20	*250mg/ 100mg*	*1 tablet (adult strength) daily for 3 consecutive days*
21 to 30	*500mg/200mg*	*2 tablets (adult strength) as single daily dose for 3 consecutive days*
31 to 40	*750mg/300mg*	*3 tablets (adult strength) as single daily dose for 3 consecutive days*
>40	*1 gm/400 mg*	*4 tablets (adult strength) as single daily dose for 3 consecutive days*

Side-effects:

Headache
Abdominal pain
Nausea/ vomiting/diarrhea
Dizziness
Cough (pediatrics)

Adverse Reactions:

Liver transaminase elevations
Possible association with seizures and psychotic events (e.g. hallucinations)
Cutaneous reactions, including photosensitivity, erythema multiforme and Stevens-Johnson syndrome-

Preparation Procedure/ Other Notes:

Take daily dose at the same time every day with food or milk
If vomiting occurs within 1 hr of dosing, repeat the dose
Treatment has not been evaluated for treatment of cerebral malaria or other severe manifestations of complicated malaria.
Absorption may be reduced in patients with diarrhea or vomiting. May need to add antiemetic to

prevent vomiting.
Include protective clothing, insect repellants, bed nets as important components of malaria prophylaxis. If a dose is skipped, take it as soon as possible, and then return to normal schedule. Do not double the next dose.

TMEP Use:

Malaria Protocol (See TMEP 37)

Mefloquine (Larium®)

Description: antimalarial agent

Indications:

Prevention of mild to moderate malaria caused by *Plasmodium falciparum* (including chloroquine-resistant strains) and *P. vivax.*

Treatment of mild to moderate malaria caused by Mefloquine-susceptible strains of *P. falciparum* (both chloroquine-susceptible and resistant strains) and *P. vivax*

Contraindications:

Hypersensitivity to related compounds (e.g. quinine, quinidine)

Patients with:

Active depression
Recent history of depression
Generalized anxiety disorder
Psychosis
Schizophrenia or other major psych disorders
History of convulsions

Adult Dose:

Prophylaxis: 250mg once weekly
Initiate therapy 1-2 weeks prior to departure to endemic area
Dose must be administered on same day of week
Continue prophylaxis for 4 additional weeks upon return from endemic area
Treatment:: 5 tablets (1250mg) given as a split dose taken 6-8 hours apart.
Do not take on empty stomach.
Take with at least 240ml (8oz.) glass water

Pediatric Dose:

Prophylaxis:
Children > 45kg: one 250mg tablet should be taken in children
Children <45kg: weekly dose decreases in proportion to body weight (3 to 5mg/kg once weekly):
30 to 45kg: ¾ tablet
>20 to 30 kg: ½ tablet
Up to 20 kg: ¼ tablet
Experience with Mefloquine in infants < 3 months or weighing < 5mg is limited
Initiate therapy 1 week prior to departure to endemic area
Dose must be administered on same day of week
Continue prophylaxis for 4 additional weeks upon return from endemic area
Treatment: *20 to 25mg/kg for nonimmune patients*
Splitting the dose into 2 doses taken 6 to 8 hrs apart may reduce adverse effects
Treatment in children has been associated with early vomiting; if patient vomits within 30 minutes of dose and a significant loss of drug is suspected by inspection of emesis, re-dose patient with full dose; if vomiting occurs within 30 to 60 minutes, administer ½ the full dose.
Do not administer on an empty stomach and give with ample water.
For very young patients, dose may be crushed, mixed with water or sugar water and may be administered via oral syringe.
Experience in infants < 3 months or < 5kg is limited

Side-effects:

Cardiac rhythm disturbances

Exercise caution when performing activities requiring alertness and fine motor coordination such as driving, piloting, operating heavy machinery as dizziness, loss of balance have occurred with Mefloquine during and following its use

Adverse Reactions:

Reactions (symptoms) attributable to Mefloquine cannot be distinguished from symptoms of malaria. Due to long half-life of the drug, symptoms could persist for several weeks following the last dose.

Prophylaxis

Vomiting (3%)

Dizziness

Syncope (fainting)

Extrasystoles (skipped hearbeats; <1%)

Treatment

Dizziness, headache

Myalgia (muscle aches)

Nausea, vomiting

Fever, chills

Diarrhea

Skin rash

Abdominal pain

Fatigue

Loss of appetite

Tinnitus (ringing in the ears)

Preparation Procedure/ Other Notes:

Patients given Mefloquine for *P. vivax* are at high risk for relapse and should subsequently receive Primaquine.

There is insufficient clinical data to document Mefloquine's effect on malaria caused by *P. ovale* or *P. malariae.*

Liver impairment can prolong the elimination of Mefloquine.

When Mefloquine is taken concurrently with oral live typhoid vaccines, attenuation of immunization cannot be excluded. Therefore, complete attenuated oral live vaccinations at least 3 days before starting Mefloquine

Anticonvulsant blood levels (e.g. phenytoin [Dilantin®], valproic acid [Depakote®], carbamazepine [Tegretol®], and phenobarbital) may be reduced by Mefloquine and therefore risk for convulsions may increase in patients with history of epilepsy. Mefloquine itself has also been associated with convulsions in the absence of anticonvulsant treatment

TMEP Use:

Malaria Protocol (See TMEP 37)

Meloxicam – See Mobic (See Below)

Metronidazole – See Flagyl (See Section A-13)

Mobic (Meloxicam)

Description: NSAID

Indications:

Relief of the signs and symptoms of osteoarthritis and rheumatoid arthritis. .

Mild to moderate pain relief

Contraindications:

Allergy to NSAID class of drugs, Aspirin.

Dosage:

7.5mg or 15mg daily. The maximum recommended daily oral dose is 15mg.

Side-effects:

Allergic reaction
Anaphylactoid reactions including shock
Face edema
Fatigue
Fever
Hot flushes
Malaise
Syncope
Weight decrease
Weight increase
Dyspepsia

TMEP Use:

Pain Management Protocol (See TMEP 41)

Motrin (Ibuprofen)

Description: NSAID, analgesic, antipyretic

Indications:

Mild to moderate pain
Arthritis

Contraindications:

NOTE: Should not be given to patients with a history of aspirin sensitivity or severe asthma
Penetrating trauma
Suspected internal bleeding
Suspected intracranial bleeding
Pregnancy
Nursing mothers.

Dosage:

200 to 800mg PO TID. or QID Not to exceed 2400mg/day (800mg TID)

Side-effects:

Nausea
Vomiting
Headache
Dizziness
Drowsiness

Adverse Reactions:

Prolonged bleeding time
Tinnitus
Edema
Peptic ulcer

TMEP Use:

Pain Management Protocol (See TMEP 41)

Morphine Sulfate (opiod)

Description: Narcotic analgesic - alters perception of pain and emotional response to pain.

Have Narcan available when using Morphine.
Alters perception and emotional response to pain.

Indications:

Severe pain
Pain from cardiac ischemia

Contraindications:

Respiratory depression
Hypotension
Head injury

Adult Dose: 4 to 15mg IV/IM slow push. Titrate to response.

Pediatric Dose: *0.1 to 0.2mg/Kg IM/IV. Do not exceed 15mg.*

Side-effects:

Hypotension
Bradycardia
Nausea
Vomiting
Dizziness
Pruritus
Skin flushing

Adverse Reactions:

Seizures with large doses
Constipation
Ileus
Urinary retention

TMEP Use:

Chest Pain of Possible Cardiac Origin (See TMEP 16)
Flank Pain Protocol (See TMEP 25)
Pain Management Protocol (See TMEP 41)
Pulmonary Embolus Protocol (See TMEP 42)

Moxifloxacin (Avelox)

Description: 4th generation quinolone

Broad spectrum antibiotic with broad anaerobic coverage for PO/IV administration). Inhibits DNA preventing cellular replication and division.

Indications:

Community-acquired pneumonia (CAP), including CAP caused by multi-drug resistant *Streptococcus pneumoniae**
Complicated skin and skin structure infections, including diabetic foot infections
Complicated intra-abdominal infections, including polymicrobial infections such as abscesses

Contraindications:

Hypersensitivity to fluroquinolones
Patients < 18 years old
Pregnancy and lactation
Uncorrected hypokalemia

Dosage:

400mg/day PO/IV
IV infusion should be over 60 minutes
Avoid use with antacids;
Decrease dose in renal impairment
Avoid using with antiarrhythmics. May cause prolonged QT interval.

Side-effects:

Headache
Nausea

Diarrhea
Photosensitivity
Insomnia
Vertigo,

Adverse Reactions:

Tendon rupture
Use cautiously with NSAIDs due to increased CNS stimulation.
Prolonged QT interval
Abnormal dreams
Pseudomembranosus colitis

Preparation Procedure/ Other Notes:

Oral antacids decrease absorption of the Moxafloxacin when taken orally.
Visually inspect any solution of Moxafloxacin for particulate matter and discoloration prior to use. Solution must be clear.
IV administration- must be reconstituted prior to administration.
Do not mix or co-infuse with other medications.
At cool temperatures precipitation may occur, which will re-dissolve at room temperature.

TMEP Use:

Acute Head and Neck Infection, Including Epiglottitis, Protocol (See TMEP 8)
Bronchitis/Pneumonia (Mild) Protocol (See TMEP 14)
Cellulitis Protocol (See TMEP 15)
Cutaneous Abscess Protocol (See TMEP 21)
Epistaxis Protocol (See TMEP 24)
Gastroenteritis Protocol (See TMEP 27)
Ingrown Toenail Protocol (See TMEP 34)
Meningitis Protocol (Prophylaxis) (See TMEP 38)
Otitis Externa Protocol (See TMEP 39)
Otitis Media Protocol (See TMEP 40)
Renal Colic/Kidney Stone Protocol (See TMEP 43)
Urinary Tract Infection Protocol (See TMEP 50)

Mupirocin ointment 2% - See Bactroban (See Section A-3)

Naloxone HCl – See Narcan (See Below)

Narcan (Naloxone HCl)

Description: Narcotic antagonist.

Indications:

Known or suspected narcotic induced respiratory depression.
Have available when using morphine.

Adult Dose: 0.4 to 2mg IV. Repeat q. 2 to 3min/prn.

Duration is 20 to 40 minutes (< duration of action of morphine). Repeat doses of may be necessary after 20 to 30 minutes.

Pediatric Dose: *0.01mg/Kg dose IM, IV or SQ q. 2 to 3 min.*

If initial dose does not result in clinical response, increase dose up to 0.1mg/Kg
If no response after 10mg has been administered, diagnosis of narcotic induced toxicity should be questioned.

Side-effects:

In narcotic dependent patient, withdrawal symptoms may be precipitated.

Adverse Reactions: With higher than recommended doses:

Nausea
Vomiting

Tachycardia
Hypertension
Tremors

TMEP Use:

Loss of Consciousness (without seizures) Protocol (See TMEP 36)

Nelfinavir – See Viracept (See Section A-34)

Nifedipine (Procardia)

Description: An antianginal drug belonging to a class of pharmacological agents, the calcium channel blockers. It works by relaxing blood vessels so blood can flow more easily.

Indications:

Certain types of chest pain (angina). It may help to increase exercise tolerance and decrease the frequency of angina attacks. Use other medications (e.g., sublingual nitro glycerin) to relieve attacks of chest pain.

Dose:

10mg PO, repeat x 1 in 8 hours. SEE TMEP.

Side-effects: Primarily vasodilatory in nature (hypotension)

Warning:

Although, in most patients, the hypotensive effect of nifedipine is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension.

TMEP use:

High Altitude Pulmonary Edema Protocol (See TMEP 30)

Ondansetron – See Zofran (See Section A-36)

Oral Fentanyl (Actiq Lozenge)

Description: Opioid. Oral transmucosal fentanyl citrate.

Indications: Severe battlefield related trauma pain

Dosage: 400 to 800mcg.

The blister package should be opened with scissors immediately prior to product use. The patient should place the ACTIQ unit in his or her mouth between the cheek and lower gum, occasionally moving the drug matrix from one side to the other using the handle. The ACTIQ unit should be sucked, not chewed. A unit dose of ACTIQ, if chewed and swallowed, might result in lower peak concentrations and lower bioavailability than when consumed as directed. The ACTIQ unit should be consumed over a 15-minute period. Longer or shorter consumption times may produce less efficacy than reported in ACTIQ clinical trials. If signs of excessive opioid effects appear before the unit is consumed, the drug matrix should be removed from the patient's mouth immediately and future doses should be decreased.

Treatment of Overdose:

Ventilatory support
Intravenous access
Narcan (naloxone) or another opioid antagonist may be warranted in some instances, but it is associated with the risk of precipitating an acute withdrawal syndrome.

Side-effects: The most serious adverse effects associated with all opioids are:

Respiratory depression (potentially leading to apnea or respiratory arrest)
Circulatory depression
Hypotension
Shock
All patients should be followed for symptoms of respiratory depression.

TMEP Use:

Acute Abdominal Pain Protocol (See TMEP 4)
Pain Management Protocol (See TMEP 41)

Oxymetazline HCl – See Afrin Nasal Spray (See Section A-1)

Phenergan (Promethazine HCl)

Description: Phenothiazine class. An H1 receptor blocking agent. Antihistamine, sedative, antimtion-sickness, antiemetic, and anticholinergic effects. The duration of action is generally from four to six hours. The major side-effect of this drug is sedation.

Indications:

Antihistamine for allergies
Anaphylactic reactions in addition to epinephrine.
Nausea
Vomiting
Motion sickness.
Antiemetic therapy

Contraindications:

Subcutaneous injection may result in tissue necrosis
Children < 2 years old
Comatose states
Antiemetics should not be used in vomiting of unknown etiology in children.
Asthma

Adult Dose:

Oral Dose: The average adult dose is 25mg q 4 h.
Motion Sickness: The average adult dose is 25mg taken twice daily. The initial dose should be taken one-half to one hour before anticipated travel and be repeated 8 to 12 hours later, if necessary. On succeeding days of travel, it is recommended that 25mg be given on arising and again before the evening meal.
Parenteral: Administered by deep IM injection.
Nausea/vomiting: 12.5mg to 25mg q 4-6 h PRN. If taking narcotics or barbiturates, it may be necessary to reduce doses of those medications to prevent excess somnolence.
Motion Sickness: 12.5mg to 25mg; repeat PRN up to 4 times/day

Pediatric Dose:

Oral Dose:
Nausea / Vomiting:
2-12 years old; 1.1mg/kg of body weight. Do not exceed half of the suggested adult dose.
Children < 2 years old: Contraindicated
Motion Sickness: Contraindicated in children
Parenteral: Administered by deep IM injection
Nausea / Vomiting :
2 to 12 years old: 12.5mg to 25mg q 4 to 6 h PRN. If taking narcotics or barbiturates, reduce the dose to 1.1mg/kg.
Motion Sickness: Contraindicated in children

Side-effects:

Drowsiness, sedation, sleepiness
Anticholinergic effects – dry mouth, urinary retention, dry eyes, constipation
Photosensitivity
Bradycardia.
Urticaria,
Sedation
Respiratory Depression

Hypotension
Chest pain

Adverse Reactions:

Lowers seizure threshold
Extrapyramidal symptoms, dystonia
May exacerbate glaucoma
May exacerbate hypertension
Cholestatic jaundice
Arrhythmias

Warning:

Intra-arterial injection may result in gangrene of the affected extremity
Because of the potential for Phenergan to reverse epinephrine's vasopressors effect, epinephrine should **NOT** be used to treat hypotension associated with Phenergan overdose.

Preparation Procedure/Other Notes:

Store at room temperature, between 15° to 25° C (59° to 77° F).
Protect from light.
Use carton to protect contents from light.
Do not use if solution is discolored or contains a precipitate.
IV administration may be hazardous and is **NOT** recommended

TMEP Use:

Acute Abdominal Pain Protocol (See TMEP 4)
Acute Mountain Sickness Protocol (See TMEP 9)
Flank Pain Protocol (See TMEP 25)
Gastroenteritis Protocol (See TMEP 27)
Headache Protocol (See TMEP 28)
HIV Post Exposure Prophylaxis Protocol (See TMEP 31)
Hyperthermia Protocol (See TMEP 32)
Meningitis Protocol (See TMEP 38)
Pain Management Protocol (See TMEP 41)
Renal Colic/Kidney Stones Protocol (See TMEP 43)

Primaquine

TMEP Use:

Malaria Protocol (See TMEP 37)

Procardia – See Nifedipine (See Section A-26)

Promethazine HCl – See Phenergan (See Section A-27)

Proventil – See Albuterol Inhaler (See Section A-2)

Pseudoephedrine – See Sudafed (See Section A-31)

Quinine

TMEP Use:

Malaria Protocol (See TMEP 37)

Quinolones – General Antimicrobial Spectrum

1st generation: Gram negative (excluding Pseudomonas), urinary tract only.
Example: nalidixic acid
2nd generation: Gram negative (including Pseudomonas); Staph aureus but not Pneumococcus; some atypicals.

Examples: ciprofloxacin, norfloxacin, ofloxacin

3rd generation: Gram negative (including Pseudomonas); gram positive (including Staph aureus and Pneumococcus); expanded atypical coverage.

Example: levofloxacin

4th generation: Same as 3rd generation: plus broad anaerobic coverage.

Examples: gatfloxacin, moxifloxacin, trovafloxacin

Ranitidine – Zantac

Rocephin (Ceftriaxone Sodium)

Description: 3rd generation cephalosporin

Broad spectrum bactericidal antibiotic for IV/IM use.

Indications:

Serious infections of the lower respiratory tract (i.e. pneumonia); urinary tract; skin infections; intra-abdominal infections (especially penetrating abdominal trauma); penetrating trauma to the extremities; and CNS infections

Contraindications:

Use caution in patients with a history of:
Penicillin allergy
Hepatic dysfunction
Liver dysfunction

Adult Dose:

1 to 2gm IM/IV daily or in divided doses BID; Max dose 4gm/day

Pediatric Dose:

50 to 75 mg/Kg given in divided doses q12 hours, max dose 2gm/day.

Side-effects:

Headaches
Dizziness
Nausea
Vomiting
Diarrhea
Abdominal cramps
Urticaria
Temperature

Adverse Reactions:

Eosinophilia
Thrombocytosis
Leukopenia
Injection Site --
Pain
Induration
Sterile abscess
Tissue sloughing
Phlebitis
Thrombophlebitis with IV use

Preparation Procedure:

Withdraw 10cc NaCl from a 100cc bag. Inject 10cc NaCl into 1gm Rocephin vial.
Mix.
Withdraw entire contents of vial and inject into original 100cc NaCl IV bag.
Mix.
Piggyback with running IV.
If giving IM, reconstitute with 1% lidocaine **WITHOUT** epinephrine.

TMEP Use:

Acute Abdominal Pain Protocol (See TMEP 4)
Acute Dental Pain Protocol (See TMEP 7)
Acute Head and Neck Infection, Including Epiglottitis, Protocol (See TMEP 8)
Bronchitis/Pneumonia (Severe) Protocol (See TMEP 14)
Cellulitis Protocol (See TMEP 15)
Flank Pain Protocol (See TMEP 25)
Joint Infection Protocol (See TMEP 35)
Meningitis Protocol (See TMEP 38)
Renal Colic/Kidney Stone Protocol (See TMEP 43)
Sepsis/Septic Shock Protocol (See TMEP 45)

Sudafed (Pseudoephedrine)

Description: Adrenergic class. Primary activity though α-effects on respiratory mucosal membranes reducing congestion, hyperemia, edema, and minimal bronchodilation secondary to β-effects.

Indications:

Nasal decongestant
Adjunct in otitis media with antihistamines

Contraindications:

Hypersensitivity
Narrow angle glaucoma

Precautions:

Pregnancy
Cardiac disorders
Hyperthyroidism
Diabetes mellitus
Prostatic hypertrophy
Lactation
Hypertension

Adult Dose:

30 to 60mg q4 to 6h PO

Pediatric Dose:

6 to 12 years old: 30mg/dose PO q 4 to 6h
2 to 5 years old: 15mg/dose PO q4 to 6h

Side-effects:

CNS: Tremors, anxiety, insomnia, headache, dizziness, hallucinations, seizures
CV: Palpitations, tachycardia, hypertension, chest pain, dysrrhythmias
EENT: Dry nose, irritation of nose and throat
GI: Nausea, vomiting, anorexia, dry mouth
GU: dysuria

Other Notes:

Do not use continuously, or more than recommended dose.
Rebound congestion may occur.
Avoid taking at bedtime, stimulation may occur.

TMEP Use:

Allergic Rhinitis/Hay Fever/ Cold Like Symptoms (See TMEP 10)

Tequin – Gatifloxacin **(No longer used)**

Tetracaine .5% Drops

Description: Local anesthetic

Indications:

As a topical optic anesthetic (may aid in ocular exam to relieve blepharospasm); removal of foreign bodies

Contraindications:

Not for prolonged use

Dosage:

1 or 2 drops 2 to 3 minutes before procedure
See appropriate TMEP

Side-effects:

Stinging
Tearing
Swelling
Sensitivity to light

Adverse Reactions:

Conjunctival redness
Transient eye pain
Hypersensitivity reactions

TMEP Use:

Corneal Abrasion, Corneal Ulcer, Conjunctivitis Protocol (See TMEP 19)

Tetracycline Class of Antibiotics – See Doxycycline (See Section A-9)

Tylenol (Acetaminophen)

Description: Nonnarcotic analgesic and antipyretic. Blocks generation of pain impulses in the CNS by preventing sensitization of pain receptors.

Indications:

Mild Pain or fever

Contraindications:

Individuals with hypersensitivity to drug
Cautious use in history of excess alcohol use
Chronic liver damage

Dosage:

325 to 650mg PO q 4 to 6 hours; or 1gm PO every 6 to 8h

Side-effects:

Rash
Urticaria

Adverse Reactions:

Hemolytic anemia
Liver damage

TMEP Use:

Acute Abdominal Pain Protocol (See TMEP 4)
Acute Mountain Sickness Protocol (See TMEP 9)
Back Pain (Acute, Musculoskeletal, Severe) Protocol (See TMEP 13)
Bronchitis/Pneumonia Protocol (See TMEP 14)
Constipation/Fecal Impaction Protocol (See TMEP 17)
Corneal Abrasion, Corneal Ulcer, Conjunctivitis Protocol (See TMEP 19)
Headache Protocol (See TMEP 28)
Ingrown Toenail Protocol (See TMEP 34)
Joint Infection Protocol (See TMEP 35)
Malaria Protocol (See TMEP 37)
Meningitis Protocol (See TMEP 38)
Otitis Externa Protocol (See TMEP 39)

Otitis Media Protocol (See TMEP 40)
Pain Management Protocol (See TMEP 41)
Renal Colic/Kidney Stone Protocol (See TMEP 43)
Subungual Hematoma Protocol (See TMEP 48)
Urinary Tract Infection Protocol (See TMEP 50)

Valium (Diazepam): Benzodiazepine

Description: General CNS depressant (Anticonvulsant/sedative).

Indications:

Acute anxiety
Seizures
Status epilepticus
Relaxation of skeletal muscle
Drug of choice for treatment of convulsions associated with chemical agents or organophosphates.
NOTE: Successful treatment of convulsions from organophosphate or chemical exposure may require mass quantities and repeated administration of Diazepam (Valium).
Has **NO** analgesic or anesthetic properties.
Overdose may be reversed w/ Romazicon (Flumazenil)

Contraindications:

Head injury
– BP
Acute narrow angle glaucoma
Has additive effect with other respiratory depressants (morphine, phenergan and alcohol). Be prepared to perform BLS.

Dosage:

Status Epilepticus: 5 to 10mg IV slow push
Acute anxiety: 5 to 15mg IV slow push
Relaxation of skeletal muscle: 5 to 15mg IV slow push
Chemical Warfare: 10 to 15mg IV slow push
Auto injection Diazepam should be used for seizures induced by chemicals.

Side-effects:

– BP
Respirations
Drowsiness
Venous irritation
Pain at injection site
N & V

Adverse Reactions:

Bradycardia
CV collapse
Amnesia
Abdominal discomfort

TMEP Use:

Acute Behavioral Changes Protocol (See TMEP 6)
Back Pain (Acute, Musculoskeletal, Severe) Protocol (See TMEP 13)
Seizures Protocol (See TMEP 44)

Ventolin – See Albuterol Inhaler (See Section A-2)

Viracept (Nelfinavir)

TMEP Use:

HIV Post Exposure Prophylaxis Protocol (See TMEP 31)

Xylocaine – See Lidocaine HCL (See Section A-17)

Z- Pak - See Zithromycin

Zantac (Ranitidine)

Description: H-2 blocker; ¯ secretion of stomach acid

Indications:

Gastric and/or peptic ulcers
Upper GI bleeds
Prevention of stress ulcers in burn victims or patients on steroid treatment.
Drug of choice for treatment of gastric or peptic ulcers.
Adjunct in treatment of urticaria and anaphylaxis.

Contraindications:

NOTE: Drug Interactions: ¯absorption of oral diazepam.
Known/suspected liver disease

Adult Dosage:

50mg IV or IM q 6 to 8 hours for ulcers, burns, steroid use, upper GI bleeds, urticaria or anaphylaxis.
Oral dose: 150mg BID for ulcer or urticaria.

Pediatric Dose: *1.5mg/kg IV x 1, then 0.75mg/kg IV every 12 hours*

Side-effects:

Headache
Diarrhea
Constipation
Muscle aches
Vertigo
Malaise
Dry mouth
Nausea
Vomiting

Adverse Reactions:

Thrombocytopenia
Liver toxicity

TMEP Use:

Anaphylactic Reaction Protocol (See TMEP 11)

Zithromax (Z-Pac, Azithromycin)

Description: Macrolide antibiotic

Indications:

Acute bacterial sinusitis
Mild community acquired pneumonia
Chancroid (Genital ulcer disease)
Pharyngitis/tonsillitis as alternative drug choice to first line therapy
Uncomplicated skin infections
Urethritis

Contraindications:

Known allergy to azithromycin
Z-pac in children
Patients receiving:
Astemizole (Hismanal – antihistamine taken off of the U.S. market)
Cisapride (Propulsid – GI medication)

Adult Dose:

500mg as single dose on day 1, then 250mg daily on days 2 through 5.

Pediatric Dose: *(6 months of age or older)*

Z-pac is not indicated for children. The oral suspension is the only dose approved for use in children, and is dosed on a mg/kg basis.

1 0mg/kg up to 500mg the first day; then 5mg/kg up to 250mg for the next 4 days

Side effects:

Generally mild and reversible upon discontinuation of therapy.
Nausea, vomiting, diarrhea, abdominal pain

Adverse reactions: Rare

Angioedema (swelling of the larynx)
Cholestatic jaundice
Hypersensitivity

Preparation Procedure/ Other Notes:

Can be taken with or without food
Continue regimen for duration of prescription

TMEP Use:

Bronchitis/Pneumonia (Mild) Protocol (See TMEP 14)
Cellulitis Protocol (See TMEP 15)
Cutaneous Abscess Protocol (See TMEP 21)
Gastroenteritis Protocol (See TMEP 27)
Ingrown Toenail Protocol (See TMEP 34)
Meningitis (Prophylaxis) Protocol (See TMEP 38)
Otitis Externa Protocol (See TMEP 39)
Otitis Media Protocol (See TMEP 40)
Renal Colic/Kidney Stone Protocol (See TMEP 43)
Urinary Tract Infection Protocol (See TMEP 50)

Zofran (Ondansetron)

Description: antiemetic

Indications:

Prevention of nausea and vomiting

Contraindications:

Hypersensitivity to any component of product

Adult Dose:

Oral Dose: 4 to 8mg PO TID up to 48 hours
IV / IM Dose : 4mg IV over 2 to 5 minutes or 4mg IM injection, TID

Pediatric Dose:

Oral Dose: Little information available on dosing in children <= 3 yrs
4 to 11 years of age: 4mg TID up to 48 hours
>12 years of age: 4 to 8mg PO BID up to 48 hours
IV Dose: Little information available on dosing in children <= 2 yrs
2 to 12 years old and <40kg: single .1mg/kg IV dose over 2 to 5 minutes
2 to 12 Years and > 40kg: 4mg IV over 2 to 5 minutes

Side-effects:

Anxiety
Dizziness
Sedation/drowsiness
Headache
Malaise/fatigue
Chills/shivering
Constipation or diarrhea

Fever
Pruritis
Urinary retention
Musculoskeletal pain
Extrapyramidal symptoms
Arrhythmias
Hypotension
Chest pain

Adverse Reactions:

Elevated liver transaminases
Rare cases of hypersensitivity, sometimes severe (anaphylaxis) have been reported.
Syncope (rare)
Grand mal seizures (rare)
Bronchospasm (rare)
Transient blurred vision (rare)
Hypokalemia (rare)

TMEP Use:

Acute Abdominal Pain Protocol (See TMEP 4)
Acute Mountain Sickness Protocol (See TMEP 9)
Flank Pain Protocol (See TMEP 25)
Gastroenteritis Protocol (See TMEP 27)
Headache Protocol (See TMEP 28)
HIV Post Exposure Prophylaxis Protocol (See TMEP 31)
Hyperthermia Protocol (See TMEP 32)
Meningitis Protocol (See TMEP 38)
Pain Management Protocol (See TMEP 41)
Renal Colic/Kidney Stone Protocol (See TMEP 43)

Zymar – See Gatifloxacin 0.3% ophthalmic liquid (See Section A-14)

2006 Joint Drug List Authors

U.S. SPECIAL OPERATIONS COMMAND (USSOCOM)
OFFICE OF THE COMMAND SURGEON

COL Warner D. ("Rocky") Farr, MD
Command Surgeon

HMCM Glenn Mercer
Senior Enlisted Medical Advisor (SEMA)

CPT Steven L. Briggs, SP, APA, MPAS-C
Command Physician Assistant
Chief, Medical Education and Training

USSOCOM Curriculum Examination Board

JF Rick Hammesfahr, MD, AAOS
Chairman, Curriculum and Evaluation Board
Director, The Center for Orthopaedics and Sports Medicine
Marietta, Ga

Robert W. Hesse, RN, NREMT-P, I/C
Clinical Manager, PHI Air Medical

Eleanor A. O'Rangers, Pharm. D.
Director of Medical Affairs
Crestor US Brand Team
AstraZeneca LP

U.S. SPECIAL OPERATIONS COMMAND

TACTICAL MEDICAL EMERGENCY PROTOCOLS

For SPECIAL OPERATIONS ADVANCED TACTICAL PRACTITIONERS (ATPs)

December 13, 2006

USSOCOM OFFICE OF THE COMMAND SURGEON
DEPARTMENT OF EMERGENCY MEDICAL SERVICES AND PUBLIC HEALTH
7701 Tampa Point Boulevard
MacDill Air Force Base, FL 33621
(813) 826-5065

PREFACE

Management of medical emergencies is best accomplished by appropriately trained physicians in an Emergency Department setting. Special Operations combat medics (SOCMs), however, may often find themselves in austere tactical environments where evacuation of a teammate to an MTF for a medical emergency would entail either significant delays to treatment or compromise of the unit's mission. Although SOCM-trained medics are not routinely authorized by the services to treat non-traumatic emergencies, in many SOF situations, training SOCMs to treat at least some medical emergencies may result in both improved outcome for the individual and an improved probability of mission success. The disorders chosen have one of the following properties in common: they are relatively common; they are acute in onset; the SOCM is able to provide at least initial therapy that may favorably alter the eventual outcome; and the condition is one that is either life-threatening or could adversely effect the mission readiness of the SOF operator.

TABLE OF CONTENTS

Acute Barotrauma from Diving or Swimming (Includes Eardrums, Sinuses, Lungs)

SPECIAL CONSIDERATIONS:

1. Barotrauma (damage from changes in pressure) can occur from descent in the water column ("squeeze") or from ascent from depth if compressed air was used ("reverse squeeze" or pulmonary over-inflation).
2. The most commonly affected site is the middle ear and tympanic membrane, but paranasal sinuses and even teeth can be affected.
3. Pulmonary barotrauma occurs when compressed air is breathed at depth followed by ascending with a closed airway (i.e. breath-holding) , and can cause pneumothorax or arterial gas embolism.

SIGNS AND SYMPTOMS:

1. Middle ear - acute pain in ears, usually on descending. May be accompanied by tinnitus and vertigo. Exam may show redness, bleeding, or rupture of tympanic membrane.
2. Paranasal Sinuses - acute pain in affected sinus area (mid-face, upper jaw, peri-orbital, or forehead). May cause bleeding from nose or facial bruising.
3. Dental - acute pain localized to tooth or jaw, usually upon ascent from diving.
4. "Facemask Squeeze", with conjunctival hemorrhage and peri-orbital bruising, may occur if mask is not equalized..
5. Pulmonary Over-inflation: cough, shortness of breath, sharp pain over one side of chest with deep inspiration, voice change, or crepitation in skin over upper chest or neck (subcutaneous emphysema). Possibly decreased breath sounds over one side of chest (pneumothorax).
6. Pulmonary barotraumas may lead to cerebral arterial gas embolus (CAGE). CAGE may cause symptoms similar to a stroke, with confusion, visual changes, speech difficulty, or unconsciousness. Monitor patient carefully for neurological signs and symptoms.

MANAGEMENT:

1. Middle ear - if tympanic membrane is not ruptured, no specific treatment other than rest and avoidance of further pressure changes. Decongestants optional. If TM is ruptured, protect ear from water or further trauma. Consider antibiotics, but do not use ear drops. Refer to higher level of care when feasible.
2. Paranasal Sinus barotraumas. No specific treatment other than avoidance of further trauma. Decongestants may be helpful.
3. Dental. No specific treatment other than pain control, observation, and evaluation of underlying dental defect (abscess, cavity, or loose filling).
4. Facemask squeeze - No specific treatment. Cold compress may reduce bruising, if it occurs.
5. Pulmonary barotraumas - if no respiratory distress, subcutaneous emphysema or small pneumothorax may be treated with oxygen breathing at normal pressure. Monitor pulse oximetry, if available. If respiratory distress occurs, treatment for tension pneumothorax, including needle thoracentesis or tube thoracostomy (chest tube), may be necessary.
6. If cerebral arterial gas embolus is suspected, administer 100% oxygen and IV normal saline and consider evacuation to recompression chamber ASAP. If possible, avoid altitude exposure greater than 1000 feet during evacuation.

DISPOSITION

1. Cerebral arterial gas embolus or pneumothorax with respiratory distress, *Urgent* Evacuation
2. Mild to moderate middle ear, sinus, or pulmonary barotraumas without respiratory distress, Observation and *Routine* evacuation.
3. Tympanic Membrane rupture - *Routine* evacuation for consultation.

The protocols outlined in the following pages carry the following assumptions:

A. **The SOCM medic is in an austere environment where a medical treatment facility or a unit sick call capability is not available. If a medical treatment facility or a medic authorized to treat patients independently is available, then the patient should be seen in those settings rather than by a SOCM medic.**
B. The individual to be treated is a team member, a coalition partner, or a detainee.
C. Immediate evacuation may not be possible and, even if it is, may still entail significant delays to definitive treatment. The medical problem may worsen significantly if treatment is delayed.
D. The SOCM will contact a consulting physician as soon as feasible.
E. SOCM treatment will be done under the appropriate protocol.
F. **Medication regimens are designed to minimize the number of medications the SOCMs are required to learn and carry. Medications have been used for multiple conditions when feasible without compromising care.**
G. Appropriate documentation of diagnosis and treatment rendered in the patient's medical record will be accomplished when the unit returns to forward operating base.
H. Note these protocols are not designed to allow SOCM medics to conduct Medical/Civic Action (MEDCAP) missions independently.
I. Evacuation recommendations are based on the appropriate therapy per protocol being initiated on diagnosis.
J. The definitions of Urgent, Priority, and Routine evacuations are based on the times found in Joint Publication 4-02.2 of 2, 4, and 24 hours respectively.
K. The changes in the combat pill pack (Moxifloxacin and Mobic), as recommended by the Committee on Tactical Combat Casualty Care, have been changed in the TME Protocols.
L. The Fentanyl oral dosage of 800 mcg, as recommended by the CoTCCC has been incorporated into the pain protocol.
M. The change in the IV antibiotics has also been changed to reflect medication availability.
N. When possible, alternate antibiotics or anti-emetics have been listed.
O. For any infection, limit contact and use universal precautions.

Acute Behavioral Changes (Includes Psychosis, Depression and Suicidal Impulses)

SPECIAL CONSIDERATIONS:
1. In a tactical setting consider sleep deprivation as a cause.
2. Etiologies are numerous and will often dictate the management; thus, mental status changes could be caused by head trauma, metabolic and endocrine disease processes, environmental toxins, infections, combat stress disorder, hypoxia, hyperthermia, hypothermia pharmaceutical agent use (i.e. mefloquine) or withdrawal.
3. Consider diabetic hypoglycemia as a cause of altered mental status

SIGNS AND SYMPTOMS:

1. Acute behavioral changes include withdrawal, depression, aggression, confusion, or other behavioral patterns atypical for the individual.
2. Psychosis is an acute change in mental status characterized by altered sensory perceptions that are not congruent with reality:
   A. Auditory and/or visual hallucinations
   B. May include violent or paranoid behavior
   C. Disorganized speech patterns are common
   D. May include severe withdrawal from associates

MANAGEMENT:

1. Remove all weapons or potential weapons from patient and treating medic.
2. Place patient in safe environment under continuous surveillance.
3. If hypoxia is suspected as a cause, check pulse oximetry.
4. For acute agitation, combativeness, or violent behavior, restrain patient with at least four individuals and give Valium (diazepam) 10 mg IM.
5. Repeat Valium (diazepam) once if needed after 30 minutes.
6. Consider giving contents of 1 sugar packet sublingually to treat for possible hypoglycemia.
7. **IF MENINGITIS IS SUSPECTED OR IF THERE IS A DECREASE IN MENTAL STATUS, USE VALIUM WITH CAUTION DUE TO POSSIBLE RESPIRATORY DEPRESSION, HYPOTENSION, AND MASKING OF PROGRESSION OF DISEASE RELATED ALTERED MENTAL STATUS.**
8. If meningitis is suspected, use the *Meningitis* protocol.
9. If sedated or restrained, maintain constant vigilance for a change in the hemodynamic status or loss of airway reflexes.

DISPOSITION *Urgent* Evacuation

Acute Abdominal Pain

SPECIAL CONSIDERATIONS:
1. Common causes in young healthy adults include appendicitis, cholecystitis, pancreatitis, perforated ulcer, and diverticulitis.
2. Consider constipation/ fecal impaction as a potential cause of abdominal pain.

SIGNS AND SYMPTOMS:

1. Severe, persistent or worsening abdominal pain is the key sign.
2. Rigid abdomen
3. Rebound abdominal tenderness
4. Fever
5. Diarrhea is not typical but can be present with appendicitis.
6. Absence of bowel sounds
7. Focal percussive tenderness
8. Nausea and/or vomiting

MANAGEMENT:

1. Start IV with normal saline (NS) at 150 cc/hr.
2. Ertapenem 1 gm IV QD **OR** 3rd generation Cephalosporin Rocephin (ceftriaxone) 1 gm IV qd
3. Keep patient NPO
4. Tylenol (acetaminophen) 1000 mg PO q6h PRN pain (OK to take with sip of water)
5. Zofran (ondansetron) 4 mg IV undiluted administered over 2 to 5 minutes or IM BID for nausea/vomiting, **OR** Phenergan 25 mg IM/IV/PO.
6. For severe pain, use Fentanyl 800 mcg oral transcutaneous lozenge (attempt to discuss treatment with receiving surgeon before use). This medication needs to be well documented when use

DISPOSITION:
1. *Urgent* evacuation to a surgical facility.

Acute Dental Pain

SPECIAL CONSIDERATIONS:
Most common causes are deep decay, fractures of tooth crown/root or acute periapical (root end) abscesses

SIGNS AND SYMPTOMS:

1. Intermittent or continuous pain, usually intense, heat or cold sensitivity
2. Visibly broken/cracked tooth
3. Severe pain on percussion
4. Intraoral swelling/abscess

MANAGEMENT:

1. Follow *Pain Management Protocol*
2. If signs and symptoms of infection are present, administer Keflex, 250 mg qid for 7 days **OR** Rocephin 1 gm IV/IM qd x 7 days

DISPOSITION
1. Evacuation usually not necessary
2. *Routine* evacuation if not responding to therapy

7

Acute Mountain Sickness (AMS)

SPECIAL CONSIDERATIONS:
1. Usually occurs at altitudes of 8,000 ft. and higher.
2. Consider pretreatment with Diamox, 250 mg BID, when rapid ascent to altitudes above 8,000 feet may occur
3. Preceded by 6-12 hour latent period after ascent.
4. Can avoid onset by limiting initial ascent to no higher than 8,000 ft., then 1,000 ft. per day thereafter.
5. A specific acute mountain sickness prophylaxis protocol may already exist at your location.

SIGNS AND SYMPTOMS:

1. Generally benign and self-limited, but symptoms may become debilitating.
2. Headache
3. Nausea/vomiting
4. Insomnia
5. No correlation with fitness level (likely genetic predisposition).

MANAGEMENT:

1. Halt ascent.
2. In a severe case of AMS or if patient is allergic to sulfa, give Decadron (dexamethasone) 10 mg IM/IV initially, followed by 4mg IM, IV, or PO q6h for 3 days.
3. Diamox (acetazolamide) 250 mg PO BID **UNLESS PATIENT IS ALLERGIC TO SULFA.**
4. Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If no response, follow *Pain Management Protocol.*
5. Zofran (ondansetron) 4 mg IV undiluted administered over 2-5 minutes or IM BID for nausea and vomiting or 8 mg PO, **OR** Phenergan 25 mg IM/IV/PO.
6. Descend 1,500 ft. or more for severe or refractory cases if tactically feasible.
7. PO or IV hydration per *Dehydration Protocol* PRN
8.

DISPOSITION:
1. Most cases are relatively mild, resolve in 2-3 days, and do not require evacuation.
2. Remain vigilant for signs of HACE (altered mental status and ataxia) or HAPE (dyspnea at rest). *See individual protocols for management of these diseases.*

9

Anaphylactic Reaction

SPECIAL CONSIDERATIONS:
1. Acute, widely distributed form of shock which occurs within minutes of exposure to an allergen.
2. Primary causes include insect envenomation, medications, and food allergies.
3. Death can result from airway compromise, inability to ventilate, or cardiovascular collapse.
4. The medic's responsibility is to know if members in the unit have such a condition. Moreover, the medic most also ensure that the member has some sort of anaphylaxis kit and is trained to use it.

SIGNS AND SYMPTOMS:
1. Wheezing (bronchospasm)
2. Dyspnea
3. Stridor (laryngeal edema)
4. Angioedema
5. Urticaria, Hives
6. Hypotension
7. Cardiac dysrrhythmias
8. Myocardial ischemia

MANAGEMENT:

1. Epinephrine is the mainstay of therapy.
   a. 0.5 mg (0.5 ml of 1:1000 IM). **DO NOT USE INTRAVENOUSLY.**
   b. Repeat one time in five minutes if symptoms persist
2. Benadryl (diphenhydramine) 50 mg IM, IV, or PO
3. IV access with normal saline TKO (heplock)
4. Decadron (dexamethasone) 10 mg IM or IV
5. Oxygen (if available)
6. Pulse oximetry monitoring
7. Zantac (Ranitidine) 150 mg po or 50 mg IV/IM
8. If severe respiratory distress exists, aggressive airway management with bag-valve-mask and airway adjuncts (oral and nasopharyngeal airways). Intubate early if no response to epinephrine.
9. Administer a 1 to 2 liter normal saline bolus for hypotension; then titrate to establish systolic blood pressure > 90 mmHg or normal radial pulse if BP cuff not available.

DISPOSITION:
1. If signs and symptoms resolve completely, monitor for 6 hours. Evacuation is not required if patient remains stable.
2. *Urgent* evacuation for severe cases not responsive to initial therapy or recurrence of symptoms during the 6 hour observation period.

11

Back Pain (Acute, Musculoskeletal, Severe)

SPECIAL CONSIDERATIONS:
1. Usually there is a previous history of back pain.
2. Generally musculoskeletal in etiology.
3. Often associated with heavy lifting or unaccustomed physical activity.

SIGNS AND SYMPTOMS:

1. Onset of acute back pain – often poorly localized.
2. Pain worsens with movement.
3. Pain radiating down one of the legs is usually caused by a herniated intervertebral disc.
4. Lack of neurological involvement :
   A. No weakness
   B. No numbness
   C. No bowel or bladder dysfunction
5. Pain is often severe and debilitating.

MANAGEMENT:

1. Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If no response, follow *Pain Management Protocol.*
2. Apply cold compress to painful area for 20-25 minutes TID, followed by stretching.
3. Trigger point injections with local anesthetic (if trained). Lidocaine, 1-2 cc per trigger point. May repeat daily for 2 days.
4. If the above therapy is unsuccessful after 24 hours, consider using Valium (diazepam) 10 mg IM/ IV. Repeat once in 6-8 h if needed.
5. Minimize activity initially, but encourage a gradual return to full mobility as soon as tolerated.
6. Avoid high impact exercises (vigorous calisthenics) or other vigorous exercise until fully recovered.
7. If back pain is accompanied by fever and/or urinary symptoms, treat as per *Flank Pain Protocol.*

DISPOSITION:
1. Evacuation is often not required if the back pain responds to therapy.
2. Routine evacuation for severe cases not responding to therapy.
3. Urgent evacuation for patients with neurological involvement (other then pain)
   A. Weakness
   B. Bowel or bladder dysfunction
   C. Anesthesia

13

Allergic Rhinitis/ Hay Fever/ Cold Like Symptoms

SPECIAL CONSIDERATIONS:
1. History of allergies to cedar, mold, pollen, etc.

SIGNS AND SYMPTOMS:

1. Clear nasal drainage
2. Pale, boggy or inflamed nasal mucosa
3. With or without complaints of nasal congestion
4. Watery or red eyes
5. Sneezing
6. No oral temperature

MANAGEMENT:

1. Pseudoephedrine (Sudafed), 30 mg tabs, 2 tabs every 4 - 6 hours
2. **OR** Benadryl (diphenhydramine) 25 - 50 mg PO if tactically feasible. **(Drowsiness is a side effect.)**
3. Increase oral fluid intake

DISPOSITION:

Acute Head and Neck Infection, Including Epiglottitis

SPECIAL CONSIDERATIONS:
1. Most common causes in young healthy patients include odontogenic (dental origin) cutaneous sources or post-injury (wound or fracture) infections.
2. These infections may progress rapidly from minor to airway/life threatening

SIGNS AND SYMPTOMS:

1. Pain, fever and malaise
2. Intra/extra oral swelling
3. Trismus
4. Pus
5. Dysphagia
6. Airway compromise

MANAGEMENT:

1. Manage airway and breathing first!
2. Place patient in position of comfort
3. Monitor pulse oximetry
4. O2 prn
5. IV access
6. Moxafloxacin 400 mg po qd for 7 days **OR** Rocephin 1 gm IV/IM qd for 7 days
7. Follow *Pain Management Protocol*
8. **FOR ANY AIRWAY INVOLVEMENT, CONSIDER DECADRON, 10 MG IV**
9. If airway intervention is felt to be indicated, make a single attempt at intubation if feasible (the epiglottis is not swollen to the extent that visualization of cords is not possible.)
10. If intubation is attempted, do not attempt the procedure more than once. If intubation has failed, the next step is a cricothyroidotomy (using lidocaine if conscious).
11. Have cricothyroidotomy kit available before attempting intubation

DISPOSITION
1. If there is no airway compromise present and the infection is not widespread *Routine* Evacuation
2. If any airway compromise is present - *Urgent* Evacuation

Bronchitis/Pneumonia

SPECIAL CONSIDERATIONS:
1. Consider also high altitude pulmonary edema (HAPE) at high altitudes.
2. Consider also pulmonary embolism (PE) and pneumothorax (fever and productive cough are atypical for these).
3. Patient may already be on doxycycycline for malarial prophylaxis. Therefore, assume causative organism to be doxycycline resistant.

SIGNS AND SYMPTOMS:

1. Fever
2. Productive cough, especially with dark yellow, red tinged, or greenish sputum
3. Chest pain
4. Rales may be present and breath sounds may be decreased over the affected lung.
5. Dyspnea may be present in severe cases.

MANAGEMENT:

1. Mild cases: Zithromax (azithromycin) 500 mg PO first dose and then 250 mg QD for 4 days **OR** Moxifloxacin 400 mg PO QD for 5 days
2. **Severe Cases:** Add Ertapenem 1 gm IV/IM **OR** 3rd Generation Cephalosporin IV Rocephin (ceftriaxone) 1 gm qd IV
3. Albuterol by metered dose inhaler 2 to 4 puffs q4 to 6h
4. Tylenol (acetaminophen) 1000 mg PO q6h PRN pain and/or fever or *Pain Management Protocol*
5. Pulse oximetry monitoring
6. Oxygen for hypoxic patients (if available)
7. Descend 1,500 – 3,000 ft. if at high altitude

DISPOSITION:
1. *Urgent* evacuation for severe dyspnea.
2. *Priority* evacuation otherwise.

Asthma (Reactive Airway Disease)

SPECIAL CONSIDERATIONS:
1. Pulmonary disorder characterized by bronchiolar hyper-responsiveness and narrowing of the distal airways.
2. SOF patients may mask early signs and symptoms due to physical fitness, but may suddenly worsen.
3. Pulse oximetry hemoglobin oxygen saturation should be greater than 96% unless patient is at altitude.
4. Other disorders to consider: anaphylactic reaction, spontaneous pneumothorax, HAPE, and pulmonary embolism.
5. May see acute exacerbations of asthma with changes in geographic locations due to varying allergen levels in the environment.

SIGNS AND SYMPTOMS:

1. Wheezing
2. Dyspnea
3. Respiratory distress

MANAGEMENT:

1. Albuterol (metered dose inhaler – works better with use of spacer) 2 to 3 puffs q5 min for 3 times
2. **IF THERE IS NO RESPONSE TO ALBUTEROL,** Epinephrine 0.5 mg (0.5 ml of 1:1000 solution) IM **(DO NOT INJECT INTRAVENOUSLY)**. May repeat one dose in 5-10 minutes.
3. IV access with saline lock
4. Decadron (dexamethasone) 10 mg IV or IM
5. Oxygen (if available)
6. Pulse oximetry monitoring
7. Field intubation is not indicated for this disorder unless respiratory arrest occurs.
8. If there is superimposed fever, chest pain, and cough, treat per *Pneumonia* protocol.

DISPOSITION:
1. If the patient responds to management, observe for 4 hours and then return to duty if there is decreased wheezing upon auscultation, increased ease of respiration, and normal oxygen saturation.
2. If Returned To Duty, continue Albuterol (2 puffs every 6 hours and re-evaluate in 24 hours. Repeat Decadron 10 mg IM qd for 4 days if symptoms recur.
3. If poor response to therapy, arrange *Urgent* evacuation.

Cellulitis

SPECIAL CONSIDERATIONS:
1. Superficial bacterial skin infection
2. Often secondary to trauma or scratching other skin lesions
3. Generally begins about 24 hours following a break in the skin, but more serious types of cellulitis may be seen as early as 6-8 hours following animal or human bites.

SIGNS AND SYMPTOMS:

1. A painful, erythematous, slightly raised plaque with well-demarcated borders is seen.
2. Fever may or may not be present.
3. Typically, erythema spreads without treatment.
4. Rapidly spreading and very painful infections suggest the possibility of necrotizing fasciitis, a life-threatening infection of the deeper tissues, and should be treated per the bacterial *Sepsis* protocol.

MANAGEMENT:

1. Moxifloxacin 400 mg PO QD x 10 days **OR** Zithromax pack
2. Clean and dress wound and surrounding area.
3. Use a marker to demarcate the border of the infection and re-evaluate in 24 hours.
4. If possible, limit activity until infection clears.
5. For cellulitis not responding to above therapy, use Ertapenem 1gm IV/IM QD **OR** 3rd generation Cephalosporin and continue with PO (Moxifloxacin 400 mg po qd **OR** Zithromax Pack).
6. Follow *Pain Management Protocol.*

DISPOSITION:
1. Re-evaluate daily and watch for progression of erythema while on antibiotics.
2. Typically evacuation is not needed, but *Priority* evacuation should be initiated if improvement is not seen within 24-48 hours or if infection continues to worsen on antibiotics.

15

Constipation/Fecal Impaction

SPECIAL CONSIDERATIONS:
1. Often seen with change of rations in the field.
2. Differential diagnosis includes acute appendicitis, volvulus, ruptured diverticulum, bowel obstruction, and pancreatitis.
3. Acute onset, severe pain, point tenderness, and fever point to etiologies other than constipation and fecal impaction.

SIGNS AND SYMPTOMS:

1. A recent history of infrequent passage of hard, dry stools or straining at defecation.
2. Abdominal pain, which is typically poorly localized with cramping.
3. If pain becomes severe and is associated with nausea/vomiting and complete lack of flatus or stools, consider a bowel obstruction.

MANAGEMENT:

1. Dulcolax (bisacodyl) 10 mg PO TID as needed to initiate bowel movement
2. Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain (***no narcotics – they cause constipation***)
3. For impacted stool or no relief with above measures, give normal saline enema with 500 ml per rectum (use lubricated IV tubing).
4. If above measures fail, perform digital rectal examination to check for fecal impaction. If fecal impaction is present, perform digital disimpaction, if trained.
5. Increase PO fluid intake.
6. Increase fiber (fruits, bran, and vegetables) in diet if possible.
7. Consider parasitic infecitions.

DISPOSITION:
1. Evacuation is usually not required for this condition.
2. *Routine* evacuation if there is no response to therapy.
3. If severe pain, rigid board-like abdomen, fever, and/or rebound tenderness develop, and moderate to large amounts of blood are present in the stool, then treat per the *Surgical Abdomen* protocol.

17

Corneal Abrasions, Corneal Ulcers, Conjunctivitis

SPECIAL CONSIDERATIONS:
1. Contact lens corneal abrasions are at a high risk for development of a corneal ulcer. They should not be patched and require more intensive antibiotic therapy.
2. Consider LASIK Flap dislocation for anyone that sustains eye trauma after LASIK surgery.

SIGNS AND SYMPTOMS:
1. History of eye trauma or contact lens wear
2. Eye pain – typically becoming worse over several days
3. Eye redness
4. Tearing
5. Blurred vision
6. Light sensitivity
7. Fluorescein positive (bright yellow area of the cornea after applying fluorescein and examining the eye with a cobalt blue light source)
8. White or gray spot on cornea (usually need tangential penlight exam to see) for corneal ulcer
9. For sudden onset of eye pain after trauma in a patient after LASIK surgery, consider LASIK flap dislocation

MANAGEMENT:

1. Remove contact lens if worn.
2. Tetracaine 0.5%, 2 drops in the affected eye for pain relief. Do not dispense to patient.
3. Check for foreign body to include eyelid eversion.
4. Zymar (gatifloxacin) 0.3% drops – 1 drop in the affected eye qid while awake.
5. Tylenol (acetaminophen) 1000 mg PO q6h PRN pain or *Pain Management Protocol*
6. Reduce light exposure, stay indoors if possible - sunglasses if not.
7. For corneal abrasions: monitor daily for worsening signs and symptoms of a corneal ulcer (increasing pain and development of a white or grey spot at abrasion site). **DO NOT PATCH.**
8. Check with fluorescein drops daily—abrasions should get progressively smaller. Continue antibiotic drops until 24 hours after cornea becomes fluorescein negative (no bright yellow spot).
9. **IF CORNEAL ULCER PRESENT**: Increase Zymar to q2h and priority evacuation.

DISPOSITION:
1. Evacuation may not be needed for corneal abrasion if improving with treatment.
2. Priority evacuation for Corneal Ulcer
3. Urgent evacuation for LASIK Flap dislocation.

19

Cutaneous Abscess

SPECIAL CONSIDERATIONS:

Do not attempt I&D in the tactical setting unless:
- A. The abscess is clearly red, hot, and tender to the touch.
- B. The abscess is on a location other than eyelid, neck, or face and is superficial.
- C. Local anesthesia with lidocaine 1% without epinephrine is available.

SIGNS AND SYMPTOMS:

1. Pain
2. Erythema
3. Warmth
4. Tenderness
5. Swelling
6. Fluctuant Mass
7. Induration

MANAGEMENT:

1. **For cellulitis without abscess, follow *Cellulitis Protocol.***
2. Incise and drain (I&D) if discomfort is severe:
   - A. Establish sterile incision site with betadine.
   - B. Local anesthesia using Lidocaine 1% without epinephrine.
   - C. Incise with scalpel making an opening no larger than necessary to allow purulent material to drain freely.
   - D. Incision should be parallel to skin tension lines if feasible.
   - E. On initial treatment, leave wound open and pack tightly with iodoform gauze, if available. On subsequent dressings, wick the wound. **DO NOT SUTURE THE SITE**.
3. Bandage over site with wound checks daily
4. Moxafloxacin 400 mg po qd x 10 days **OR** Zithromax pack

DISPOSITION:
1. Evacuation is usually not required.
2. Return To Duty with appropriate wound management precautions.
3. Infection precautions and daily checks of wounds site.
4. If condition is worsening (spreading erythema, increasing pain, fever) then patient needs to be treated as per *Cellulitis Protocol* and evacuate as *Priority*.

21

Contact Dermatitis (Poison Ivy and Oak)

SPECIAL CONSIDERATIONS:
1. Insect bite(s) as a differential diagnosis - are also accompanied by itching, but have discrete red popular lesions(s).
2. Cellulitis as a differential diagnosis- is bright red, painful, not pruritic, and typically becomes steadily worse without antibiotics.
3. Fungal infection as a differential diagnosis – is not always pruritic; infections sites(s) slowly enlarge without therapy.
4. Effects are particularly dangerous if there is contact in or around the eyes.

SIGNS AND SYMPTOMS:
1. Acute onset
2. Skin erythema
3. Intense itching (pruritis)
4. May see edema, papules, vesicles, bullae, discharge, and/or crusting.

Management:
1. Change clothes when possible and bag original clothes until they can be machine washed.
2. Wash area with mild soap and water to remove resin from skin.
3. Apply cold wet compress to affected area to help decrease itching.
4. If available, apply 1% hydrocortisone cream to the affected area and cover with a dry dressing to help prevent spread to other parts of the body or clothing.
5. In severe cases, Decadron 10 mg IM daily for 5 days, PRN.

DISPOSITION:
1. Evacuation is not needed for mild cases.
2. Priority evacuation for severe symptoms, intra-oral or eye involvement, or >50% body surface area (BSA) involvement care.
3. Monitor for secondary infection; treat as per *Cellulitis Protocol* if suspected on the basis of increasing pain, redness, or purulent crusting.

18

Chest Pain of Possible Cardiac Origin

SPECIAL CONSIDERATIONS:
1. This treatment protocol assumes no access to ACLS monitoring and defibrillation equipment.
2. The Special Operations Combat Medic (SOCM) typically does not carry most ACLS medications when deployed in tactical operational environments.
3. Myocardial infarctions (heart attacks) usually occur in patients over 40, but may occasionally be seen in younger individuals.
4. Beta blockers were also not felt to significantly improve likely outcome in the tactical setting.

SIGNS AND SYMPTOMS:
1. H/O hypertension, diabetes, smoking, elevated cholesterol, obesity, family history of MI at a young age are all risk factors.
2. Substernal chest pain which may radiate to left arm or jaw.
3. Pain often described as pressure or squeezing.
4. Dyspnea
5. Diaphoresis (sweating)

MANAGEMENT:
1. Aspirin (ASA) 325 mg – chew to speed absorption
2. IV access
3. Morphine sulfate 4 mg IV initially, then 2 mg q5-15min as needed for pain relief
4. Oxygen (if available)
5. Pulse oximetry monitoring

DISPOSITION:
1. *Urgent* evacuation
2. The evacuation package should include personnel certified in ACLS and an evacuation platform with ACLS equipment and medications.

16

Deep Venous Thrombosis (DVT)

SPECIAL CONSIDERATIONS:
1. DVT is a potentially life threatening condition, in which a clot is present in the large veins of a leg. This clot may dislodge and become localized in the pulmonary system (pulmonary embolism).
2. May occur in young adults secondary to trauma, long airplane rides, altitude exposures, and genetic predisposition.
3. Low dose anticoagulants acceptable here because of rapid evacuation to medical treatment facility.
4. May be confused with a ruptured Baker's cyst in a tactical setting.

SIGNS AND SYMPTOMS:
1. History of preceding air travel, trauma, birth control pill use (especially smokers), or family history of DVT
2. Defined as an occluding thrombus (blood clot) in the deep venous drainage system.
3. Usually seen in the lower extremities but may occur in any of the deep veins
4. Pain and swelling in the lower extremities (often the calf muscles).
5. May have palpable venous "cord"
6. Warmth over affected area
7. Increased pain in the affected calf muscles with dorsiflexion of the foot

MANAGEMENT:
1. Monitor patient with pulse oximetry (sudden decrease in oxygen saturation suggests a pulmonary embolism.)
2. ASA 325 mg po
3. For associated respiratory distress see *Pulmonary Embolus Protocol.*
4. Immobilize the affected extremity.

DISPOSITION:
1. *Priority* evacuation if no respiratory distress.
2. *Urgent* evacuation If respiratory distress and chest pain develop or are present

22

Cough

SPECIAL CONSIDERATIONS:
1. Usually viral etiology, but may also occur with high altitude pulmonary edema (HAPE) and pneumonia.

SIGNS AND SYMPTOMS:
1. Cough with or without scant sputum production.
2. Often accompanied by other signs and symptoms of upper respiratory tract infection (i.e. sore throat and rhinorrhea).

MANAGEMENT:
1. Treat symptomatically (using Cepacol lozenges or other appropriate medications) when the findings on history and physical do not suggest pneumonia.
2. Albuterol Metered Dose Inhaler 3-4 puffs q4h may also help control coughing
3. Force PO hydration.
4. Avoid respiratory irritants (smoke, aerosols, etc).

DISPOSITION:
1. Evacuation is usually not required.
2. Treat as *Pneumonia* if accompanied by fever, chest pain, dyspnea, and/ or colored sputum (green, dark yellow or red-tinged).

20

Dehydration

SPECIAL CONSIDERATIONS:
1. Troops in the field are often chronically dehydrated.
2. Prolonged missions, acute diarrhea (gastroenteritis), viral/bacterial infections, and environmental factors (heat stress or working hard) all may exacerbate the dehydration.
3. May also occur in cold or high altitude environments due to low humidity and low availability of water.

SIGNS AND SYMPTOMS:

1. Lightheadedness (worse with sudden standing)
2. Mild headache (especially in the morning)
3. Dry mucosa (mouth, nose, and eyes)
4. Decreased urinary frequency and volume
5. Dark urine
6. Degradation in performance
7. Poor skin turgor

MANAGEMENT:

1. Increase oral fluids if tolerated.
   A. Use carbohydrate/electrolyte drink mixes for fluid replacement if available. However, use a dilute solution (1:4) to avoid an osmotic shift due to high sugar/salt load.
   B. If water is to be used as a replacement fluid, add rehydration packets if available.
2. If unable to tolerate PO fluids, use normal saline (NS) IV for rehydration. Use an initial bolus of 1 liter NS, followed by attempted PO hydration. If unable to tolerate PO hydration repeat 1 liter bolus of NS.
3. If NS is not available, use available IV fluids (Ringer's, Hespan, Hextend, etc.)
4. If nausea, vomiting, and/or diarrhea are present, treat per the *Gastroenteritis Protocol*.
5. Switch to PO fluids when tolerated.

DISPOSITION:
1. Monitor closely for recurrence of dehydration.
2. If signs and symptoms resolve with treatment, no evacuation is needed.
3. If dehydration persists, *Priority* evacuation.
4. Heat stroke requires *Priority* evacuation.

Flank Pain

SPECIAL CONSIDERATIONS:
1. May be associated with testicular torsion. Assure normal external GU exam first.
2. May be associated with pyelonephritis.

SIGNS AND SYMPTOMS:
1. Flank pain
2. Flank pain radiating to testicles
3. Back pain
4. Nausea/vomiting
5. Hematuria
6. Urinary retention

MANAGEMENT:
1. IV hydration with normal saline. Give 1,000 ml over 1 hour and then 250 ml/hour.
2. Zofran (ondansetron) 4 mg IV undiluted administered over 2 to 5 minutes or IM BID for nausea and/ or vomiting for nausea and vomiting **OR** Phenergan 25 mg IM/IV/PO
3. Morphine 5-10 mg IV or IM or per *Pain Management Protocol*
4. If febrile, give Rocephin 1 gm IV q 24 h.

DISPOSITION:
Priority evacuation

Gastroenteritis

SPECIAL CONSIDERATIONS:
1. Etiology of acute diarrhea is often viral, but bacterial or parasitic infections are common in the deployed environment.
2. Emerging fluoroquinolone resistance among enteropathogenic E. Coli and Campylobacter makes azithromycin the new primary agent for therapy.
3. Consider antibiotic-related diarrhea if on antibiotics at onset.
4. Consider parasitic infection is symptoms persist for 3 or more days.
5. Must rule out malaria if fever and GI symptoms exist in a malarious area.

SIGNS AND SYMPTOMS:

1. Acute onset of nausea, vomiting, and diarrhea
2. Fever may or may not be present

Management:

1. Imodium (loperamide) 4 mg PO initially, then 2 mg PO after every loose bowel movement with a maximum dose of 16 mg per day
2. Do not use Imodium in the presence of fever or bloody stools.
3. Moxifloxacin 400 mg po qd x 3 days **OR** Zithromax pack.
4. If allergic, use Doxycycline 100 mg po bid for 7 days.
5. Zofran (ondansetron) 4 mg IV undiluted administered over 2-5 minutes or IM BID for nausea and/or vomiting **OR** Phenergan 25 mg IV/IM/PO
6. Orally hydrate with carbohydrate/ electrolyte fortified fluids if tolerated. Use normal drinking water as a secondary fluid replacement if CHO/ electrolyte fluids are unavailable. Add electrolyte rehydration packages to water if available.
7. IV rehydration using normal saline if intolerant of oral fluids; titrate fluid intake to regain normal urination frequency, urine color, and good skin turgor.
8. If diarrhea lasts for over 3 days treat the patient as having Giardia (also effective treatment for amebiasis), and give Flagyl (metronidazole) 500 mg PO TID for 10 days.

DISPOSITION:
1. Evacuation is usually not required if the condition responds to therapy.
2. If dehydration occurs despite above therapy, evacuate as *Priority*.
3. If severe, persistent diarrhea occurs after 5-10 days of antibiotics, evacuate as *Priority*.
4. Grossly bloody stools or circulatory compromise requires *Urgent* evacuation.
5. Monitor hydration status by observing urinary frequency, urine color, and skin turgor.

High Altitude Cerebral Edema (HACE)

SPECIAL CONSIDERATIONS:
1. Rare below 11,500 ft.
2. Headache is common at altitude. Ataxia and altered mental status at altitude are HACE until proven otherwise.
3. A specific HACE treatment protocol may already exist at your location.

SIGNS AND SYMPTOMS:

1. Unsteady, wide, and unbalanced (ataxic) gait
2. Altered mental status
3. Headache
4. Nausea and vomiting
5. Hallucinations
6. Disorientation
7. Typically preceded by AMS signs and symptoms
8. Cranial nerve palsy
9. Hemiparesis
10. Stupor
11. Unconsciousness

MANAGEMENT:

1. The only effective treatment is descent. Immediately descend at least 1000 ft. or until symptoms subside
2. Decadron (dexamethasone) 10 mg IM / IV initially, then 4mg IV / IM q6h
3. Diamox 250 mg po bid
4. Oxygen if available
5. Pulse oximetry monitoring
6. Individuals with HACE should not be left alone and especially not be allowed to descend alone.
7. If available, use a GAMOW bag in 1 hour treatment sessions with bag inflated to a pressure of 2 psi (approximately 100 mm Hg) above ambient pressure. Four or five sessions are typical for effective treatment.

DISPOSITION:
Urgent evacuation

High Altitude Pulmonary Edema (HAPE)

Fungal Skin Infection

SPECIAL CONSIDERATIONS:
1. Insect bite(s), eczema, and contact dermatitis are in the differential diagnosis - are also accompanied by itching, but have discrete red popular lesions(s).
2. Cellulitis as a differential diagnosis- is bright red, painful, not pruritic, and typically becomes steadily worse without antibiotics.
3. Acute contact dermatitis as a differential diagnosis - is diagnosed by sudden onset of intense itching, skin erythema, and a history of environmental exposure.
4. Poison Ivy and Oak as a differential diagnosis - skin erythema present and is intensively pruritic.

SIGNS AND SYMPTOMS:
1. Skin erythema
2. Pruritis is variable
3. Slow spreading
4. Borders of the erythematous plaques are generally irregular and/or circumferential.
5. Often initially diagnosed as contact dermatitis but gets worse with use of steroids (those without antifungal agent added).
6. Most common sites of infection are feet ("athlete's foot" or tinea pedis), groin ("jock itch" or tinea cruris), scalp (tinea capitus), and torso or extremities ("ring worm" or tinea corporis).

MANAGEMENT:
1. Use Diflucan (fluconazole) 150 mg PO once per week for four weeks (total of four doses in the absence of a cure, or 1 dose after clinically clear). If not resolved after 4 weeks, refer to Physician.
2. Clean rigorously with soap without injuring the skin.

DISPOSITION
Evacuation is usually not required for this condition.

Epistaxis

SPECIAL CONSIDERATIONS:
1. Common at altitude and in desert environments due to mucosal drying.
2. May be anterior or posterior
3. Posterior epistaxis may be difficult to stop and may cause respiratory distress due to blood flowing into the airway. This type of epistaxis is uncommon in young healthy adults. It is more commonly seen in older, hypertensive patients.

SIGNS AND SYMPTOMS:
1. Nosebleed
2. Often previous H/O nosebleeds

MANAGEMENT:
1. Afrin (oxymetazoline) nasal spray 2 squirts in each nostril then pinch anterior area of nose firmly for full 10 minutes WITHOUT RELEASING PRESSURE
2. **IF BLEEDING CONTINUES:**
   A. Insert Afrin-soaked nasal sponge bilaterally along floor of nasal cavity. Continue pinching the nose just below the nasal bridge, for 10 minutes.
3. Once bleeding has stopped, remove the Afrin nasal sponge (after 30 minutes) and apply Bactroban to the affected nostril 2-3 times per day.
4. Clear airway of clots and other material (if required) by having patient sit up, lean forward, and blow his/her nose.
5. IV access via saline lock or NS TKO if indicted by severity of nose bleed.
6. **IF BLEEDING CONTINUES**
   A. Prepare 14 French Foley catheter (Tip is cut to minimize distal irritation)
   B. Advance catheter along floor of nose (straight in) until visible in mouth
   C. Fill balloon with 5 cc of normal saline
   D. Retract catheter until well opposed to posterior nasopharynx.
   E. Add another 5 cc of normal saline to balloon
   F. Clamp in place without using excessive anterior pressure
   G. Moxifloxacin 400 mg po qd until packing is removed.
   H. **LEAVE BALLOON AND PACKING IN PLACE FOR 72 HOURS.**

DISPOSITION:
1. Evacuation may not be required if epistaxis is mild, anterior, and resolves with treatment.
2. *Priority* evacuation for severe epistaxis not responding to therapy or if Foley catheter is used.

SPECIAL CONSIDERATIONS:
1. Caused by the hypoxia of altitude, HAPE is the most common cause of death from altitude illness.
2. Usually occurs above 8,000 ft.; respiratory distress at high altitude is HAPE until proven otherwise.
3. A specific HAPE treatment protocol may already exist at your location

SIGNS AND SYMPTOMS:
1. Shortness of breath
2. Dry cough
3. Dyspnea at rest
4. Symptoms of AMS
5. Late symptoms include:
   A. Gurgling on auscultation
   B. Blood tinged sputum (hemoptysis)
   C. Generalized weakness
   D. Severe respiratory distress
   E. Orthopnea

MANAGEMENT:
1. The only effective treatment is immediate descent. Descend at least 1000 ft. or until symptoms subside.
2. Pulse oximetry monitoring
3. Decadron (dexamethasone) 10 mg IV / IM initially, then 4mg q6h
4. Nifedipine 10 mg PO; repeat q 8 h if blood pressure is stable.
5. Oxygen 6-10 liters/min if available
6. If immediate descent is not tactically feasible, and if a GAMOW bag is available, use a GAMOW bag in 1 hour treatment sessions with bag inflated to a pressure of 2 psi (approximately 100mm Hg) above ambient pressure. Four or five sessions are typical for effective treatment. GAMOW BAG TREATMENT IS NOT A SUBSTITUTE FOR DESCENT.

DISPOSITION:
1. Evacuation may not be required if good response to therapy.
2. Do not re-ascend in a tactical setting.
3. Avoid vigorous activity for 3-5 days.
4. *Priority* evacuation for patients that worsen despite therapy.

HIV Post Exposure Prophylaxis

Headache

SPECIAL CONSIDERATIONS:
1. A common and usually benign disorder
2. The differential diagnosis for the acute headache is large and includes disorders that encompass the spectrum of minor to severe underlying disorders.
3. Exposure to smokeless propellants containing nitrates or other battlefield toxins from fumes may cause acute headaches.
4. Consider altitude sickness, intracranial bleeds or meningitis .

SIGNS AND SYMPTOMS:
1. If the headache is atypical for the patient, check for elevated blood pressure (if possible), fever, neck rigidity, visual symptoms, mental status changes, neurological weakness, and hydration..
2. If the patient has fever, nuchal rigidity, photophobia, petechial rash, or nausea and vomiting, proceed to the *Meningitis Protocol.*

Management:
1. Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If no response, follow *Pain Management Protocol.*
2. If headache is accompanied by nausea & vomiting, use Zofran (ondansetron) 4 mg IV undiluted administered over 2-5 minutes or IM BID **OR** Phenergan 25 mg IM/IV/PO .
3. Oxygen (if available) and if other therapies ineffective
4. PO or IV hydration if dehydration is suspected as a cause
5. If at altitude, consider acute mountain sickness (AMS) and treat accordingly.

DISPOSITION:
1. Evacuation is usually not required if the headache responds to therapy.
2. Acute headache in the presence of fever; severe nausea and vomiting, mental status changes, focal neurological signs, or preceding seizures, loss of consciousness, or a history of "it's the worst headache in my life" constitutes a true emergency and requires *Urgent* evacuation. Also consider *Urgent* evacuation for anyone without a prior history of headaches if their pain is severe.
3. If described as the "worst headache in my life", consider antibiotic treatment per *Meningitis Protocol.*

SPECIAL CONSIDERATIONS:

1. Addition of the antiretroviral medications is expensive.
2. Initiation of the highly active antiretroviral therapy (HAART) must occur ASAP. Ideally, this is less than 8 hours after exposure, but still has some effect up to 72 hours after exposure.
3. Antiretrovirals have a significant side effect profile, including nausea, vomiting and diarrhea.
4. The amount of medications is dependant on the risk at the deployed location.
5. Obtain a sample of the source's blood for HIV testing, if applicable.

HIGH RISK EXPOSURES

1. Percutaneous injury (Needlestick or other contaminated penetrating injury).
2. Contact between body fluids and mucous membranes or non-intact skin.
3. Prolonged contact between body fluids and intact skin.
4. Unprotected sexual intercourse with a high risk individual.

MANAGEMENT:

1. Wash area with soap and water to clean area and minimize exposure.
2. Initiate antiretroviral triple therapy (recommend Combivir® [Lamivudine and Zidovudine] 1 tablet po BID, Viracept® [Nelfinavir] 1250 mg po BID) as soon as possible.
3. Do not use alcoholic beverages after Combivir administration.
4. Treat nausea and vomiting with antiemetics (Zofran **OR** Phenergan).
5. Maintain hydration and nutrition status

DISPOSITION:

1. If a significant exposure exists and HAART is not available, *Urgent* evacuation
2. If HAART is available, *Routine* evacuation

31

Hypothermia

SPECIAL CONSIDERATIONS:

1. Cardiac resuscitation should only be attempted during active rewarming.
2. Drug effects often delayed or diminished in moderate to severe hypothermia.

SIGNS AND SYMPTOMS:

1. Shivering
2. Pale, cool skin
3. Weak pulses
4. Frostbite
5. Altered mental status
6. Irregular heartbeat

MANAGEMENT:

1. Move to warm environment and remove any wet clothing.
2. Begin passive rewarming by placing in a blanket or device.
3. If responsive, administer warm fluids by mouth.
4. Consider active rewarming by administering IV fluids warmed to 40 degrees C (101.6 degrees F).
5. Do not attempt to rewarm pulseless hypothermic victims unless a defibrillator and all necessary resuscitation medications available.
6. Immerse frostbitten areas in water warmed to 40 degrees C (101.6 degrees F) only when there is no danger of refreezing.

DISPOSITION:

1. Mild to moderate cases can be treated and not evacuated.
2. Severe cases should be evacuated to facility capable of active rewarming and resuscitation.
3. *Priority* evacuation for severe hypothermia

33

Joint Infection

SPECIAL CONSIDERATIONS:

1. May result from penetrating trauma (especially animal or human bites), gonorrhea, or iatrogenic causes (i.e. attempted aspiration of joint effusion).
2. Consider also an acute joint effusion due to blunt trauma or overuse (usually less red and no fever).

SIGNS AND SYMPTOMS:

1. H/O adjacent penetrating trauma or infection
2. Single red, swollen joint
3. Fever
4. Pain

MANAGEMENT:

1. IV access
2. Ertapenem 1 gm IV/IM QD **OR** 3rd generation Cephalosporin Rocephin (ceftriaxone) 2 gm IV or IM BID
3. Tylenol (acetaminophen) 1000 mg PO q6h PRN pain. If no response, follow *Pain Management Protocol.*
4. **IMMOBILIZE THE JOINT**

DISPOSITION:

Priority evacuation

35

Malaria

SPECIAL CONSIDERATIONS:

1. Malaria MUST be considered in all febrile patients currently in, or recently in, a malarious area.
2. It is not uncommon for malaria to present like pneumonia or gastroenteritis (with vomiting and diarrhea).
3. *P. falciparum* is often fatal if not diagnosed and treated promptly.
4. It is appropriate to treat suspected malaria cases empirically if diagnostic tests (blood smears or rapid test) are not available.
5. A single negative blood smear does not rule out malaria. Patients should have blood smears every 8-12 hrs for 48 hrs to exclude malaria. FDA approved rapid diagnostic tests will likely be available soon and will be a valuable field diagnostic tool.
6. Persons on effective chemoprophylaxis may have very low parasitemias and atypical presentations.
7. Consider bacterial meningitis in evaluating the patient – treat for both disorders if meningitis is suspected.
8. Patients who cannot tolerate PO meds must be evacuated for antimalarial therapy via IV or NG tube with antiemetic suppository.
9. **IF SPECIES IS UNKNOWN, TREAT FOR P. FALCIPARUM.**

SIGNS AND SYMPTOMS:

1. Prodrome of malaise, fatigue, and myalgia may precede febrile paroxysm by several days
2. Paroxysm characterized by abrupt onset of fever, chills, rigors, profuse sweats, headache, backache, myalgia, abdominal pain, nausea, vomiting, and diarrhea (may be watery and profuse) in *P. falciparum*
3. Intermittent fever to >40-C (105-F). Fever may be near continuous in P. falciparum malaria; classic "periodicity" is usually absent. Profuse sweating between febrile paroxysms
4. Tachycardia, orthostatic hypotension, tender hepatomegaly, moderate splenomegaly, and delirium (Cerebral malaria)

MANAGEMENT: *P. FALCIPARUM* MALARIA

1. Malarone (atovaquone 250 mg/proguanil 100 mg) 4 tabs daily for 3 days with food **OR** give Mefloquine 750 mg and then 500 mg 12 hours later.
3. **OR** give Doxycycline 100 mg PO bid x 7 days **PLUS** Quinine 650 mg PO TID for 3 days (Africa), **OR** 5 days (S. America), **OR** 7-10 days (SE Asia)
4. Tylenol (acetaminophen) 1000 mg PO q4h PRN fever

MANAGEMENT: *P. VIVAX* MALARIA

1. Chloroquine 1 gm PO x 1 then 500 mg daily x 3 days starting 6 hours after 1st dose PLUS primaquine 30 mg qd x 14 days (MUST rule out G6PD deficiency before giving primaquine)

DISPOSITION:

1. Complicated malaria (cerebral, pulmonary, unstable vital signs) is a medical emergency, requiring *URGENT* treatment and evacuation
2. Routine evacuation for uncomplicated cases (normal vital signs, normal mental status, no nausea and vomiting, no cough/shortness of breath)
3. In *P. Vivax* cases, gently examine patient to ensure splenomegaly has resolved before allowing return to full duty.

37

Ingrown Toenail

SPECIAL CONSIDERATIONS:
1. Typically caused by trimming toenails in a curved fashion which impinges the lateral nail fold.
2. Other causes include nail deformity, tight fitting shoes, and rotational deformity of toes.
3. Can occur in any toe of the foot but usually occurs in the big toe.

SIGNS AND SYMPTOMS:

1. Presents with pain, edema, hyperkeratosis, and erythema of the lateral nail fold.
2. Pressure over the nail margins increases the pain.
3. Inflammatory or infectious responses are generally localized.
4. Partial or complete nail removal is typically indicated in chronic inflammation/ infection, with severe pain, of both lateral nail folds especially if the condition has lasted one month or greater

MANAGEMENT:

1. Partial toenail removal:
   A. Clean the site with soap, water, and betadine.
   B. Perform a digital block using lidocaine 1% **WITHOUT EPINEPHRINE.**
   C. Apply a tourniquet at the base of the toe.
   D. Stabilize the toe in the nondominant hand and remove the lateral quarter of the nail toward the cuticle, using a sharp scissors with upward pressure.
   E. Separate the nail from the underlying matrix and grasp it with a hemostat or forceps, removing the free piece by twisting it toward the remaining nail.
   F. Curette the posterior and lateral nail grooves to remove any debris.
   G. Remove the tourniquet if one was used.
   H. Control bleeding with direct pressure and dry the underlying nail bed.
2. Bactroban (mupirocin) 2% ointment to exposed nail bed.
3. Dress the area with a nonadherent dressing followed by a dry sterile dressing.
4. Instruct the patient to wash the area daily.
5. Recheck wound and change dressing daily.
6. Instruct patient to wear less constricting shoes and to trim their nails straight across. Optimal care is to limit walking and marching for 3-5 days.
7. Tylenol (acetaminophen) 1000 mg PO q6h PRN pain. If no response, follow *Pain Management Protocol.*
8. Systemic antibiotics are typically not needed in these procedures; however consider using Moxifloxacin 400 mg po qd for 10 days, **OR** Zithromax pack if an infection is suspected (increasing pain, redness, and swelling).

DISPOSITION:
1. Evacuation is usually not required if the condition responds to therapy.
2. The nail bed may have serous drainage for several weeks, but will usually heal within 2-4 weeks.

Hyperthermia

SPECIAL CONSIDERATIONS:
1. Heat stroke is a life-threatening effect of hyperthermia and characterized by altered mental status and/or the absence of sweating.
2. Mild and moderate hyperthermia can often be treated and the casualty returned to duty.
3. Dehydration accompanies hyperthermia due to sweating.
4. Suggest that colloids (Hextend, Hespan) be avoided in favor of crystalloids.

SIGNS AND SYMPTOMS:

1. Warm skin to touch
2. Increased thirst
3. Sweating (may be absent late)
4. Muscle cramps
5. Abdominal cramps
6. Mild-moderate weakness
7. Positive tilt test
8. Tachycardia
9. Tachypnea
10. Altered mental status

MANAGEMENT:

1. Place in cool area; dampen patient's clothes with water. Place ice packs on sides of neck, in armpits, and in groin area. **AVOID SHIVERING WHICH WILL RAISE THE PATIENT'S CORE BODY TEMPERATURE!!**
2. **Increase oral fluids if tolerated.**
   A. Use carbohydrate/electrolyte drink mixes for fluid replacement if available. However, use a dilute solution (1:4) to avoid an osmotic shift due to high sugar/salt load.
   B. If water is to be used as a replacement fluid, add rehydration packets if available.
3. If unable to tolerate PO fluids, use normal saline (NS) IV for rehydration. Use an initial bolus of 1 liter NS, followed by attempted PO hydration. If unable to tolerate PO hydration repeat 1 liter bolus of NS. 2-4 liters of NS may be required.
4. Zofran (ondansetron) 4 mg IV undiluted administered over 2-5 minutes or IM BID for nausea and vomiting or 8 mg PO, **OR** Phenergan 25 mg IV/IM/PO.
5. **For heat stroke,** apply external ice (if available) until core temperature reaches 39 degrees C (101 degrees F). Avoid excessive cooling to prevent shivering.

DISPOSITION:
1. Mild to moderate cases can be treated and not evacuated.
2. Casualties with heat stroke should be evacuated to a higher level of care.
3. *Priority* evacuation for severe hyperthermia

Meningitis

SPECIAL CONSIDERATIONS:
1. A life-threatening infection of the meninges (outer linings) of the central nervous system.
2. May be bacterial, viral, or fungal. The bacterial type may cause death in hours, even in previously healthy young adults, if not treated aggressively with appropriate antibiotics.
3. Consider malaria in differential diagnosis.

SIGNS AND SYMPTOMS:

1. Classic features include:
   A. Severe headache
   B. High fever
   C. Pain with any neck movement, particularly forward flexion
   D. Altered mental status
2. May also see:
   A. Photophobia
   B. Nausea and vomiting
   C. Malaise
   D. Seizures
3. Positive Brudzinski (pain on head and neck flexion) and Kernig's (neck pain with hip and knee flexion) signs

MANAGEMENT:

1. If this diagnosis is suspected, treatment should be initiated immediately.
2. IV access
3. Decadron (dexamethasone) 10 mg IV q6h (IM route possible alternative but prefer IV route) or PO
4. Ertapenem 1gm IV/IM QD **OR** 3rd generation Cephalosporin Rocephin (ceftriaxone) 2 gm 1v q 12 h (IM route possible alternative but prefer IV route)
5. Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain and fever if able to take PO meds. If no response, follow *Pain Management Protocol.*
6. Control of nausea and vomiting with an antiemetic (Zofran **OR** Phenergan) may be necessary.
7. If seizures occur, use *Seizure Protocol.*
8. Moxifloxacin 400 mg po x1 **OR** Rocephin 250mg IM for prophylaxis for close contacts

DISPOSITION:
1. For simple cases, no evacuation is necessary.
2. *Priority* evacuation for "malignant" otitis externa signs and symptoms:
   A. Severe headache
   B. Otorrhea (purulent drainage from ear)
   C. Cranial nerve palsy

Loss of Consciousness (without Seizures)

SPECIAL CONSIDERATIONS:
1. The most common cause of loss of consciousness (LOC) in healthy adults is orthostatic hypotension (associated with sudden standing) or vasovagal syncope (associated with sudden adverse stimulus – injections are a common cause).
2. Consider hypoglycemia, anaphylactic reaction, medication, recreational drug use, head trauma, and intracranial bleeding in addition to #1.

SIGNS AND SYMPTOMS:

1. Unconsciousness

MANAGEMENT:

1. If no respirations or pulse, follow the BLS guidelines.
2. Management of orthostatic hypotension and vasovagal syncope is accomplished by placing the patient in a supine position and ensuring that the airway is open. Patients experiencing these two disorders should regain consciousness within a few seconds. If they don't, consider other etiologies and proceed to the steps below.
3. Place either 1 tube Glutose 15 (oral glucose gel) or contents of one packet of sugar sublingually.
4. IV access
5. Narcan (naloxone) 0.8 mg IV. May be repeated in 5 minute intervals to a maximum dose of 10 mg. (Eyes may be miotic.)
6. If no response, treat for *Anaphylaxis* per protocol.
7. Pulse oximetry monitoring
8. Oxygen (if available)

DISPOSITION:
1. *Urgent* evacuation, unless loss of consciousness judged due to orthostatic hypotension or vasovagal hypotension.
2. The evacuation package should include personnel certified in Advanced Cardiac Life Support (ACLS), and a transport vehicle with equipment, supplies and medications necessary for ACLS care.

Otitis Externa

SPECIAL CONSIDERATIONS:
1. Infection of external ear canal
2. Often called "swimmer's ear" and commonly occurs after repeated head immersion.
3. Ophthalmic antibiotic drops are used to minimize number of medications carried and to prevent possible instillation of ear drops into the eye.

SIGNS AND SYMPTOMS:

1. Ear pain – increased by passive external ear movement
2. Pruritis
3. Possible exudate in external ear canal
4. Pain with movement of ear is highly suggestive
5. Decreased auditory acuity
6. Sensation of fullness and moisture in ear
7. Pain, swelling, and erythema of ear and periauricular area in severe cases

MANAGEMENT:

1. ℞ Zymar (gatifloxacin) – 4 gtts in affected ear q2h while awake. Ensure patient maintains head position for 5 minutes so meds do not drain out of site.
2. ℞ If available, Cortisporin Otic drops, 5 drops tid - qid until symptoms resolve for 48 hours
3. Form a wick from a sterile dry dressing, and place into ear canal.
4. ℞ Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If ineffective, proceed to Pain Management Protocol.
5. ℞ **IF NO RESPONSE WITHIN 24 HOURS, OR IF SIGNS AND SYMPTOMS WORSEN,** use Moxifloxacin 400 mg po qd for 10 days **OR** Zithromax Pack

DISPOSITION:
1. For simple cases, no evacuation is necessary.
2. *Priority* evacuation for "malignant" otitis externa signs and symptoms:
   a. Severe headache
   b. Otorrhea (purulent drainage from ear)
   c. Cranial nerve palsy

Pain Management Protocol

SPECIAL CONSIDERATIONS:
1. Any use of narcotic medications will be sedating and degrade the mission performance of patients
2. Avoid IM or SQ injections of narcotic medications due to the potential for delayed absorption

SIGNS AND SYMPTOMS:
Pain

MANAGEMENT:

1. Start in sequential manner in order to maximize pain control with mission performance
   A. ℞ Tylenol 1000 mg PO Q 6 H.
   B. Non Steroidal Anti-inflammatory drugs
      I. ℞ Mobic 15 mg po qd prn pain
      II. ℞ **OR** Motrin 800 mg po q8 hrs prn
   C. Narcotic Medications
      I. ℞ Oral Transmucosal Fentanyl Citrate 800 mcg po over 15 minutes (may repeat dose once)
      II. ℞ Morphine sulfate 4 mg IV initial dose and then 2 mg IV every 5 minutes up to 10 mg total dose

2. Add Zofran 4 mg IV over 2-3 minutes **OR** Phenergan 25 mg IM/IV/PO for Morphine induced nausea or vomiting

DISPOSITION:
Priority evacuation for any patients with narcotic use.

Renal Colic / Kidney Stone

SPECIAL CONSIDERATIONS:
1. May be associated with preceding lower urinary tract obstruction or infection.
2. May proceed to life-threatening systemic infection.

SIGNS AND SYMPTOMS:

1. May have preceding UTI S/S
2. Back pain
3. Flank pain
4. Nausea/vomiting
5. Costovertebral angle tenderness
6. Fever

MANAGEMENT:

1. ℞ Moxifloxacin 400 mg PO QD for 7 days if able to take PO, **OR** Zithromax Pack
2. ℞ Ertapenem 1 gm IV/IM **OR** 3rd generation Cephalosporin Rocephin (ceftriaxone) 1 gm BID IV or IM if unable to take PO or not responding to oral treatment
3. ℞ Tylenol (acetaminophen) 1000 mg PO q6h PRN pain or *Pain Management Protocol*
4. ℞ Zofran (ondansetron) 4 mg IV undiluted administered over 2 to 5 minutes or IM BID for nausea and/ or vomiting for nausea and vomiting **OR** Phenergan 25 mg IM/IV/PO
5. Force PO hydration
6. IV hydration with normal saline (NS) at 250 cc/hr if unable to tolerate PO fluids

DISPOSITION:
Priority evacuation

Sepsis/Septic Shock

SPECIAL CONSIDERATIONS:
1. Sepsis is a form of severe, life-threatening bacterial blood infection caused by an overwhelming bacterial infection.
2. Rapid onset - death may occur within 4-6 hours without antibiotic therapy.
3. **If crystalloid solutions are not available, the use of Hextend or Hespan in sepsis is acceptable in larger volumes than typically used in trauma cases.**

SIGNS AND SYMPTOMS:

1. Hypotension
2. Fever
3. Tachycardia
4. Altered mental status
5. Dyspnea
6. May see skin rash (purpura)

MANAGEMENT:

1. Start an IV (May need intraosseous infusion device - IV may be hard to start in a patient with shock.)
2. ℞ Ertapenem 1 gm IV QD **OR** Rocephin (ceftriaxone) 2 gm IV as soon as IV is started
3. If patient is hypotensive (by blood pressure measurement or absent radial pulse), give 2 liters of normal saline or Ringer's Lactate IV fluid bolus. If normal saline is not available, give 1 liter of Hextend or Hespan.
4. ℞ Epinephrine 0.5 mg (0.5ml of 1:1,000 solution) IM **(DO NOT GIVE IV)** for persistent hypotension after 2 liter bolus of NS or RL, or after 1 liter bolus of Hextend or Hespan.
5. Repeat 2 liter normal saline bolus if required for continued hypotension, then titrate fluids to maintain systolic blood pressure >90 mmHg or palpable radial pulse.
6. Watch for decreased mental status and be prepared to manage airway.

DISPOSITION:
Urgent evacuation

Pulmonary Embolus

SPECIAL CONSIDERATIONS:
1. Usually preceded by deep venous thrombosis (DVT) with lower leg pain and a history of trauma or long periods in sitting positions (e.g. aircraft flights).
2. Easy to confuse with heart attack so treat patient as having a myocardial infarction.
3. Patient with this condition may also have history of long bone or pelvic fracture.
4. Acute onset, lack of fever and no cough differentiates from high altitude pulmonary edema (HAPE) and pneumonia.
5. Lack of wheezing differentiates from asthma.

SIGNS AND SYMPTOMS:

1. Shortness of breath
2. Localized chest pain (on either side)
3. Tachycardia
4. Tachypnea (rapid breathing)
5. Diaphoresis (sweating)
6. Decreased oxygen saturation on pulse oximetry
7. Full breath sounds with no wheezing
8. Often lower extremity pain, swelling, and tenderness

MANAGEMENT:

1. Aspirin (ASA) 325 mg – chew to speed absorption
2. IV access
3. Morphine sulfate 4 mg IV initially, then 2 mg q5-15min as needed for pain relief
4. Oxygen (if available)
5. Pulse oximetry monitoring
6. Treat patient using the *Chest Pain Protocol.*
7. If at altitude greater than 8,000 ft., descend at least 1000 ft. to treat for possible HAPE. See *HAPE Protocol.*

DISPOSITION:
Urgent evacuation

Otitis Media

SPECIAL CONSIDERATIONS:
1. Infection of the middle ear which may be viral or bacterial in etiology.
2. Increased pressure in the middle ear may cause intense pain and may result in rupture of the tympanic membrane (associated with sudden decrease in pain and drainage from ear canal.)
3. The Special Operations Combat Medic (SOCM) typically may not carry an otoscope when deployed in tactical operational environments. Significant ear pain not accompanied by pain with passive movement of the external ear constitutes a presumptive diagnosis of otitis media in the tactical setting.
4. May follow air travel or ascents in mountainous terrain due to changes in ambient pressure.
5. If a patient has a history of being near a blast, consider a perforated TM.
6. Otitis Media in the SOF population is likely to be associated with changes of atmospheric pressure or a URI.

SIGNS AND SYMPTOMS:

1. Ear pain
2. Decreased auditory acuity
3. Sensation of fullness in the ear
4. Often present in the setting of an upper respiratory infection
5. May progress to rupture of the tympanic membrane with or without treatment.
6. Erythema and bulging of the tympanic membrane are hallmarks signs of this disease, but these findings are often not useful for diagnosis in the tactical environment.

MANAGEMENT:

1. Moxifloxacin 400 mg PO QD x 10 days **OR** Zithromax Pack
2. Tylenol (acetaminophen) 1000 mg PO q6h for relief of pain. If not effective go to *Pain Management Protocol*

DISPOSITION:
1. For uncomplicated cases, no evacuation is necessary.
2. *Routine* evacuation for complicated cases not responding to therapy or involving a ruptured TM.

Smoke Inhalation

SPECIAL CONSIDERATIONS:
1. More common after closed-space exposures to fire.
2. Consider possibility of carbon monoxide (CO) poisoning and need for hyperbaric oxygen in all significant cases of smoke inhalation.
3. Normal oxygen saturation by pulse oximetry DOES NOT rule out the possibility of CO poisoning.
4. Consider possibility of airway burns and need for early intubation in the presence of face or neck burns.
5. Consider possibility of other inhaled toxins.

SIGNS AND SYMPTOMS:

1. H/O smoke exposure
2. Burns
3. Coughing
4. Respiratory distress (may be delayed in onset)

MANAGEMENT:

1. Consider the use of early intubation or cricothyroidotomy if significant burns (singed nares, facial burns, etc.) suspected
2. Albuterol by metered dose inhaler 2 to 4 puffs q4 to 6h
3. Decadron (dexamethasone) 10 mg IV or IM QD for two days
4. Apply oxygen if available
5. Limit patient exertion if possible.

DISPOSITION:
1. *Urgent* evacuation for respiratory distress.
2. *Priority* evacuation if not in distress but significant inhalation suspected.

Seizures

SPECIAL CONSIDERATIONS:
1. May be caused by injury, infection, high fever, alcohol withdrawal, drug use, toxins, and structural abnormalities of the central nervous system (CNS).
2. Normal respirations do not occur during generalized convulsions.
3. Seizures may cause multiple secondary problems including:
   A. Rhabdomyolysis
   B. Lactic acidosis due to prolonged hypoxemia during seizure
   C. Aspiration pneumonia and respiratory distress
4. Diazepam is the medication selected to treat seizures in the tactical setting because it comes pre-mixed, is stable for long periods at room temperature, and works rapidly.

SIGNS AND SYMPTOMS:
1. Generalized seizure
2. +/- H/O previous seizures
3. +/- H/O recent head trauma
4. +/- H/O evidence of CNS infection
5. +/- H/O preceding headaches

MANAGEMENT:
1. Avoid trauma to patient during the seizure.
2. Valium (diazepam) 5-10 mg IV (inject no more than 5 mg per minute) for ongoing seizures (consider intraosseous (IO) access if needed.) May repeat in 15 minutes for continuing seizures up to maximum dose of 30 mg.
3. If no IV or IO access, give 10 mg Valium (diazepam) IM initially, and then repeat q 15 min as needed up to a total of 30 mg.
4. Do not attempt to force an object into the mouth to open airway.
5. Open the airway as soon as possible after seizure subsides.
6. Pulse oximetry monitoring
7. Apply oxygen if available and oxygen saturation is below 90%.
8. If seizures are accompanied by fever, consider meningitis and treat per *Meningitis Protocol.*
9. Place either 1 tube Glucose 15 (oral glucose gel) or contents of an MRE sugar packet sublingually to treat for possible hypoglycemia.
10. Be aware of post-ictal state that follows seizure.

DISPOSITION: *Urgent* evacuation

Spontaneous Pneumothorax

SPECIAL CONSIDERATIONS:
1. Usually results from anatomic abnormalities of lung, genetic predisposition, or smoking.
2. Consider also: anaphylaxis, pulmonary embolism, high altitude pulmonary edema (HAPE), asthma, and pneumonia.
3. More common in tall, thin individuals

SIGNS AND SYMPTOMS:

1. Often H/O smoking
2. Spontaneous unilateral chest pain
3. Dyspnea – typically mild
4. No wheezing
5. Decreased breath sounds on affected side
6. No leg pain or swelling

MANAGEMENT:

1. Pulse oximetry monitoring
2. Oxygen if available (use oxygen for all suspected spontaneous pneumothoraces - may help speed resolution.)
3. Consider needle decompression for suspected tension pneumothorax.
4. If needle decompression allows for patient improvement, followed by worsening of condition, consider repeat needle decompression.
5. Descend at least 1000 ft. if at altitude and HAPE is a possibility.
6. Monitor respiratory status closely while waiting for evacuation.
7. Consider the need for decompression for high altitude evacuation.

DISPOSITION:
1. *Urgent* evacuation for significant respiratory distress despite therapy.
2. *Priority* evacuation for patients whose respiratory status is stable.

Testicular Pain

SPECIAL CONSIDERATIONS:
1. The primary concern in testicular pain is differentiating testicular torsion from other causes of testicular pain
2. Testicular torsion is an medical emergency requiring urgent correction to prevent loss of the affected testicle
3. Other common causes of testicular pain include epididymitis and orchitis, infections commonly caused by STDs, as well as hernias and testicular masses

SIGNS AND SYMPTOMS:

Testicular Torsion:

1. Sudden onset testicular pain
2. Usually associated with activity
3. Associated testicular swelling
4. Abnormal position or lie of the affected testicle
5. Symptoms may be increased by testicular elevation
6. Usually associated with pain induced nausea and vomiting

Epididymitis

1. Gradual onset of worsening pain
2. May have fever and/or dysuria
3. Can be also be traumatic

MANAGEMENT:

1. If pain is sudden onset and the testicle is lying abnormally in the scrotum, an attempt to manual detorse the testicle is warranted.
   a. A single attempt to rotate the testicle outward (like opening the pages of a book) should be made
   b. If pain increases, 1 attempt to rotate the opposite direction should be made
   c. Successful detorsion will result in relief of pain
   d. If unsuccessful, treat per pain protocol and evacuate
2. Gradual onset pain with a normal lying testicle
3. Treat per *Urinary Tract Infection Protocol*.
4. Treat pain per *Pain Management Protocol*.

DISPOSITION:
1. For testicular torsion that cannot be detorsed, *Urgent* evacuation
2. For testicular torsion that has been successfully detorsed, *Priority* evacuation
3. For other causes of testicular pain, treat cause and consider evacuation if symptoms persist more than 7 days

2006 Tactical Medical Emergency Protocol Authors/Contributors

U.S. SPECIAL OPERATIONS COMMAND (USSOCOM)

COL Warner D. ("Rocky") Farr,
Command Surgeon

OFFICE OF THE COMMAND SURGEON
CPT Steven L. Briggs, USA, SP, APA, MPAS-C
Command Physician Assistant
Chief, Medical Education and Training

USSOCOM COMPONENT SURGEONS

USSOCOM Curriculum Examination Board

JF Rick Hammesfahr, MD,
Chairman - Curriculum and Evaluation Board
Director, The Center for Orthopaedics and Sports Medicine
Marietta, Ga

Col Charles W. Beadling, USAF, MC, CFS, MD, FAAFP
Director, Academic Division/Assistant Professor
Department of Military and Emergency Medicine
Uniformed Services University of the Health Sciences

Bryan E. Bledsoe, DO, FACEP
Adjunct Professor of Emergency Medicine
The George Washington University Medical Center
LTC Brian Burlingame, MD
Chief, Dept. of Surgery
Womack Army Medical Center
Fort Bragg, N.C.

MSG Alton M. Chesne, USA, 18D/18Z NREMT-P, ACLS-I, PHTLS-I
Combat Applications Group

SFC Guy M. Clark, USA, 18D, NREMT-P
Cr 20th SFG (A) /3rd

SMSgt Ramon Colon-Lopez, PJ, USAF, NREMT-P
Director of Training
USAF PJ/CRO School

SFC Ricardo A. Flores-Artola, USA, 91-W, Ranger, NREMT-P
DMRTI, Combat Casualty Care Course

MSgt Barry Frasier, USAF, NREMT-P, IDMT
Flight Chief, Aeromedical Services
24 STS

LtCol Gary J. Geracci, USAF, DC
Dept of Oral & Maxillofacial Surgery
Offutt AFB, NE

John Todaro, REMT-P, RN, TNS
Director /COO
Emergency Medicine Learning & Resource Center, Orlando, Florida

Other Contributors

Eric C. Bruno, Major, Medical Corps, Attending Emergency Physician
Lehigh Valley Hospital and Health Network
Allentown, PA

Additional Contributors to Earlier Editions

CAPT Frank Butler, USN, MD
Command Surgeon

Lt Col Mike Curriston, USAF, MD
Air Force Special Operations Command
Director of Training

COL Tom Deal, USA, MD
Joint Special Operations Command
Command Surgeon

CAPT Bob Hoyt, USN
Department of Internal Medicine
Naval Hospital, Pensacola FL

Guillermo J. Pierluisi, MD, MPH
Associate Professor
Department of Emergency Medicine
Medical College of Georgia

John P. Santamaria, MD
Associate Professor of Pediatrics at USF

Richard Schwartz, MD
Chairman, Department of Emergency Medicine
Medical College of Georgia

LTC Ian Wedmore, MD
Department of Emergency Medicine
Madigan Army Medical Center
HMCM (SEAL) Gary E. Welt, USN, SOIDC, NREMT-P
Command Senior Enlisted Medical Advisor

CAPT Andy Woods, USN, MD
Naval Special Warfare Command
Command Surgeon

Col Daniel Wyman, USAF, MD
Air Force Special Operations Command
Command Surge

Urinary Tract Infection

SPECIAL CONSIDERATIONS:
1. More common in females.
2. More common in tactical settings with dehydration and/ or kidney stones.
3. Symptoms may be confused with a sexually transmitted disease (STD). Azithromycin has been added to the treatment regimen to treat for possible STD

SIGNS AND SYMPTOMS:

1. Dysuria
2. Urinary urgency and frequency
3. Cloudy, malodorous, or dark urine may be present
4. Suprapubic discomfort

MANAGEMENT:

1. Moxifloxacin 400 mg qd x 3 days **AND** Zithromax (azithromycin) 1000 mg one time dose
2. Tylenol (acetaminophen) 1000 mg q6h PRN pain. If no response, follow *Pain Management Protocol.*
3. If fever, back pain, flank pain, and/or costovertebral angle tenderness develop, suspect kidney infection and go to *Flank Pain Protocol.*
4. Force PO hydration.

DISPOSITION:
1. Usually responds to therapy – evacuation not required if it does
2. *Routine* evacuation for worsening signs and symptoms
3. *Priority* evacuation for pyelonephritis (See *Flank Pain Protocol)*

Subungual Hematoma

SPECIAL CONSIDERATIONS:
A collection of blood under a nail: typically occurs after trauma to fingernail or toenail.

SIGNS AND SYMPTOMS:

1. Pain from the affected nail
2. Purplish-black discoloration under the nail

MANAGEMENT:

1. Decompress the nail with a large gauge needle by rotating needle through the nail directly over the discolored area until the underlying blood has been released and the pressure is relieved. Make sure that it is introduced into the affected nail with a gentle but sustained rotating motion.
2. Gentle pressure on the affected nail may help to evacuate more blood.
3. Tylenol (acetaminophen) 1000 mg PO q6h for relief PRN pain. If no response, follow *Pain Management Protocol.*
4. If a fracture is suspected, consider taping the injured finger or toe to an adjacent toe or finger, or consider splinting the injured digit with either an improvised or a commercial splint.

DISPOSITION:
Evacuation should not be required for this injury if the subungal hematoma is successfully treated.

Robert W. Hesse, RN, NREMT-P, I/C
Clinical Manager, PHI Air Medical Group

LCDR Mathew Hickey, USN, MD
Senior Medical Officer
Naval Special Warfare Group Four

LTC Troy R Johnson, MD
Deputy Commander for Clinical Services
USA MEDDAC, Fort Drum NY

Robert Kacprowicz, MD MAJ, USAF, MC
Medical Director
USAF PJ/CRO School

SMSgt Brian Kearney, USAF
Chem/Bio Specialist
Research Scientist, USAMRIID
Adjunct Professor of Chemistry, Shepherd College

Gary W. Latson, CDR, MC, USNR
Senior Medical Officer
Navy Experimental Diving Unit

Joseph Legan, MD
LtCol USAF, MC, SFS
Assistant Professor, Dept of Surgery
Uniformed Services University of the
Health Sciences

LCDR James Muccdarone, MD
NSWG 2
Little Creek, VA

HMCS(SEAL/IDC) Rich Moore
Force Medical Training & Readiness
Naval Special Warfare Command

MAJ(P) Dan "Trey" Mosely, MD
Walter Reed Army Medical Center

LTC Robert L. Mott,USA, MD, MPH
Director, Division of Preventive Medicine
Walter Reed Army Institute of Research
Eleanor A. O'Rangers, Pharm. D.
Director of Medical Affairs
Crestor US Brand Team
AstraZeneca LP

LTC Andre M. Pennardt, MD, FACEP
Group Surgeon
10th Special Forces Group (Airborne)
Adjunct Assistant Professor of Military and Emergency Medicine
Uniformed Services University of the Health Sciences

Daniel J. Schissel MD
LTC USA MC FS DMO
Chief Dermatology USAM

Joint Special Operations
Tactical Medical Emergency Protocol Formulary:

December 13, 2006

USSOCOM OFFICE OF THE COMMAND SURGEON
DEPARTMENT OF EMERGENCY MEDICAL SERVICES AND PUBLIC HEALTH
7701 Tampa Point Boulevard
MacDill Air Force Base, FL 33621
\(813) 828-5442

PREFACE

- The following is a list of medications mentioned in the Tactical Medical Emergency Protocols. However, most of the TMEPs have a preferred medication recommendation and then an alternate one. All of these recommendations are listed here.
- The CEB and RB recognize that a "one size fits all" approach to a strict formulary is unrealistic due to medication availability, mission requirements, etc. The list of medications is designed to guide the ATP in medication selection.
- For specific order of the recommended medications and specific TMEP application of the medications, **CHECK the specific TME Protocol**.
- Antibiotics: Always check potential drug allergies. If allergic to one class of medications, use alternate class of medications (Cephalosporins/Penicillins, Tetracyclines, Quinolones, Macrolides).
- **Unless specifically noted, the drug dosages listed are for an adult.**

- Angina
- Vertigo
- CNS stimulation
- Sleeplessness

- TMEP Use
  - Asthma (Reactive Airway Disease) Protocol (See Page 12)
  - Bronchitis/Pneumonia Protocol (See Page 14)
  - Cough Protocol (See Page 20)
  - Smoke Inhalation Protocol (See Page 46)

ASA – See Aspirin (See Below)

Aspirin (ASA)

- Description: Analgesic, antipyretic, anti-inflammatory, anti-platelet effect
- Indications:
  - For the temporary relief of:
    - Mild to moderate pain
    - Fever.
  - MI Prophylaxis: Reduces the risk of death and/or nonfatal myocardial infarction in patients with a previous infarction or unstable angina pectoris.
  - Transient Ischemic Attacks: Reducing the risk of recurrent transient ischemic attacks (TIAs) or stroke in patients who have transient ischemia of the brain due to fibrin emboli.
- Usual Adult Dose:
  - Adults: 325 mg. One or two tablets/caplets with water. May be repeated every four hours as necessary up to 12 tablets/caplets a day or as directed by a doctor.
- *Pediatric Dosage*
  - *>12 years and over: One or two tablets/caplets with water. May be repeated every four hours as necessary up to 12 tablets/caplets a day or as directed by a doctor*
  - *<12 years old: Do not give to children under 12 unless directed by a doctor.*
- **Contraindications**:
  - Hypersensitivity to aspirin
  - Hypersensitivity to nonsteroidal anti-inflammatory agents (NSAID)
  - History of gastrointestinal bleeding
  - Patients with bleeding disorders (e.g., hemophilia).
  - Patient age < 12 years old
- Side Effects:
  - Gastrointestinal symptoms
  - Gastrointestinal bleeding
  - Stomach pain
  - Heartburn
  - Nausea
  - Vomiting
- Adverse Reactions:

Benadryl (Diphenhydramine HCl)

- Description: Antihistamine. Prevents (but does not reverse) histamine-mediated responses.
- Indications:
  - Mild to moderate allergic symptoms and/or allergic reactions
  - Dystonic reaction
- Adult Dose:
  - 25-50mg IM / IV / PO q.i.d. Max dose 400mg/day.
- *Pediatric Dose:*
  - *(Children < 12 years): 5 mg/Kg/day in divided doses q.i.d. May be given PO, IM or IV*
- **Contraindications:**
  - Asthma
  - Pregnant or lactating females
- Side Effects:
  - Sedation
  - Blurred vision
  - Nausea
  - Vomiting
  - Diarrhea
  - Headache
- Adverse Reactions:
  - Insomnia
  - Vertigo
  - Palpitations
  - Dry mouth
  - Constipation
  - Dysuria
  - Urine retention
- TMEP Use
  - Allergic Rhinitis/Hay Fever/Cold Like Symptoms Protocol (See Page 10)
  - Anaphylactic Reaction Protocol (See Page 11)

Bisacodyl – See Dulcolax (See Page A-11)

Cephalexin – See Keflex (See Page A-17)

Ceftriaxone Sodium - Rocephin

Cephalosporins – General Antimicrobial Spectrum

- 1ST Generation: Gram positive (including Staph aureus); basic gram negative coverage.
  - *Examples: cefazolin, cephalexin, cefadroxil*
- 2nd Generation: Diminished Staph aureus, improved gram negative coverage compared to 1st generation; some with anaerobic coverage.
  - *Examples: cefotetan, cefoxitin, cefuroxime*

Acetaminophen – See Tylenol (Page A-33)

Acetazolamide – See Diamox (Page A-8)

Actiq Lozenge – See Oral Fentanyl (Page A-27)

Adrenalin – See Epinephrine (Page A-11)

Afrin Nasal Spray (Oxymetazline HCl)

- Description: Vasoconstrictor (decongestant)
- Indications: Use as an adjunct to Valsalva maneuver to clear ears and sinuses during compression and decompression.
- Dose: Spray into each nostril 2 times, twice daily. Not to exceed three consecutive days due to rebound congestion
  - NOTE: Do not tilt head backwards while spraying.
- **Contraindications:**
  - Severe damage to tympanic membrane/sinuses from barotrauma.
- Side Effects:
  - Burning
  - Sneezing and stinging of nasal mucosa
- Adverse Reactions:
  - Rhinitis
  - Rebound Congestion
- TMEP Use (See Page 24)
  - Epistaxis Protocol

Albuterol Inhaler (Ventolin, Proventil)

- Description: Inhaled beta-adrenergic agonist; relaxes bronchial smooth muscle
- Indications:
  - Relief of bronchospasm
  - Prevention/ treatment of exercise-induced bronchospasm
- Adult Dosage:
  - 2 inhalations every 4-6 hours
  - Spray 4 times into the air if using for the first time or after >4 weeks of storage
- *Pediatric Dosage:*
  - *If >4yrs old, 1 inhalation every 4-6 hours may be sufficient*
- **Contraindications:**
  - Known hypersensitivity to Albuterol
- Side Effects:
  - Similar in nature to reaction to other sympathomimetic agents
    - Tremor
    - Nausea
    - Nervousness
    - Palpitations
- Adverse reactions:
  - Hypertension

- 3rd Generation: Further diminished Staph aureus; further improved gram negative coverage compared to 1st and 2nd generation; some with Pseudomonas coverage & diminished gram positive coverage.
  - *Examples: ceftriaxone **(see Rocephin)**, cefotaxime, cefpodoxime, cefixime, cefoperazone.*
- 4th Generation: Same as 3rd generation plus coverage against Pseudomonas.
  - *Example: cefepime*

Chloroquine Phosphate

- Indications:
  - Malaria due to *P. vivax, P. malariae, P. ovale,* and susceptible strains of *P. falciparum.*
- Dose
  - The dosage of chloroquine phosphate is often expressed in terms of equivalent chloroquine base. Each 500 mg tablet of chloroquine phosphate contains the equivalent of 300 mg chloroquine base.
- **Adult Dose:**
  - **Prophylaxis**: 500 mg (= 300 mg base) on the same day of each week Initiate therapy 1-2 weeks prior to departure to endemic area
  - Dose must be administered on same day of week
  - Continue prophylaxis for 4 additional weeks upon return from endemic area
  - **Treatment**: 1 gm po x1 then 500mg po daily x 3 days starting 6 hours after first dose
- **Pediatric Dose:** The weekly suppressive dosage is 5 mg calculated as base, per kg of body weight, but should not exceed the adult dose regardless of weight.
- Precautions: Liver disease, blood disorders, psoriasis, a certain metabolic disease (glucose-6-phosphate dehydrogenase-G6PD deficiency), hearing problems, seizures.
- Side effects
  - Nausea
  - Vomiting
  - Stomach upset
  - Cramps
  - Loss of appetite
  - Diarrhea
  - Blurred vision
  - Trouble seeing at night or problems focusing clearly
  - Easy bleeding or bruising.
- Warnings:
  - It has been found that certain strains of *P. falciparum* have become resistant to chloroquine and hydroxychloroquine. Chloroquine resistance is widespread and, at present, is particularly prominent in various parts of the world including sub-Saharan Africa, Southeast Asia, the Indian subcontinent, and over large portions of South America, including the Amazon basin[1].
  - Before using chloroquine for prophylaxis, it should be ascertained whether chloroquine is appropriate for use in the region to be visited by the traveler. Chloroquine should not be used for treatment of P. *falciparum* infections acquired in areas of Chloroquine resistance or malaria occurring in patients where Chloroquine prophylaxis has failed. Patients infected

  - Interacts with NSAIDs, Coumadin, Heparin
- TMEP Use
  - Chest Pain of Possible Cardiac Origin Protocol (See Page 16)
  - Deep Venous Thrombosis Protocol (See Page 22)
  - Pulmonary Embolus Protocol (See Page 42)

Atovaquone 250mg/ proguanil 100mg - See Malarone® (See Page A-19)

Avelox – See Moxafloxacin (See Page A-25)

Azithromycin – See Zithromax, Z-Pak® (See Page A-35)

Bactroban (Mupirocin ointment 2%)

- Description: Topical antibacterial
- Indications
  - Impetigo
  - Topical Skin Infection
- Adult dose
  - Clean affected area
  - Apply small amount of antibiotic on the area 1 to 3 times/day
  - The affected area may be covered by gauze or a sterile bandage
- *Pediatric dose:*
  - *Safety in children has been established in ages 2 to 16 yrs*
  - *Pediatric dosing like adult dosing*
- **Contraindications**
  - Should not be used with open wounds
- Side effects
  - Burning, stinging, pain, itching at application site
  - Adverse reactions
  - Nausea
- Adverse reactions
  - Dry skin
  - Tenderness
  - Swelling
  - Contact dermatitis
  - Increased exudate (rare)
  - Systemic reactions (rare)
- Preparation procedure/ Other notes
  - For external use only
  - Avoid eyes and mucosal membranes
  - If no improvement in 3 to 5 days, consider alternative therapy
- TMEP Use
  - Epistaxis Protocol (See Page 24)
  - Ingrown Toenail Protocol (See Page 34)

with a resistant strain of plasmodia, as shown by the fact that normally adequate doses have failed to prevent or cure clinical malaria or parasitemia, should be treated with another form of antimalarial therapy.
- Drug Interactions
  - Ampicillin
  - ,Antacids
  - Cimetidine
  - Cyclosporine
  - Kaolin
  - Magnesium trisilicate.
- TMEP Use
  - Malaria Protocol (See Page 37)

Combivir
- TMEP Use
  - HIV Post Exposure Prophylaxis Protocol (See Page 31)

Cortisporin Otic Drops
- TMEP Use
  - Otitis Externa (See Page 39)

Decadron (Dexamethasone)
- Description: Parenteral steroid (glucocorticoid)
- Indications:
  - Emergency treatment of AMS, HACE, HAPE, when tactical conditions preclude descent or acclimatization.
  - Use of Decadron ↓symptoms of AMS, but does not speed acclimatization.
  - Use of Decadron does not preclude the need for an emergency descent. (Administer Decadron every 6 hours until descent is accomplished)
- Dosage: 4mg IV / IM / PO every 6 hours
- **Contraindications:**
  - Use caution in patients with a history of:
    - Diabetes
    - Hypertension
    - Ulcers
- Side Effects:
  - Delayed wound healing
  - Acne
  - Various skin eruptions
  - Edema
- Adverse Effects Usually dose related.
  - Psychotic behavior
  - Congestive Heart Failure
  - Hypertension
  - Cataracts
  - Glaucoma

  - NOTE: Use of Diamox results in a significant alteration in taste. Carbonated beverages will have seriously altered taste, and may be undrinkable.
  - Increased fluid intake is required with use of Diamox: Although Diamox is not in the general drug class of "diuretics", it has diuretic effects and can result in serious dehydration unless great care is taken to maintain proper hydration.
- Adverse Reactions:
  - Transient myopia (usually resolves w/ DC of drug)
  - Urticaria
  - Melena
  - Hematuria
  - Flaccid paralysis
  - Photosensitivity
  - Convulsions
- TMEP Use
  - Acute Mountain Sickness Protocol (See Page 9)
  - High Altitude Cerebral Edema Protocol (See Page 29)

Diazepam – See Valium (See Page A-33)

Diflucan (Fluconazole)
- Description: Synthetic triazole antifungal agent
- Indications:
  - Vaginal Candidiasis (vaginal yeast infections due to *Candida*).
  - Oropharyngeal and esophageal candidiasis.
  - Fungal skin infections
- Adult Dosage:
  - Skin Infection: 150 mg, 1 pill per week x 4 weeks
  - Single Dose: Vaginal candidiasis: The recommended dosage of fluconazole for vaginal candidiasis is 150 mg as a single oral dose.
  - Oropharyngeal Candidiasis: The recommended dosage of fluconazole for oropharyngeal candidiasis is 200 mg on the first day, followed by 100 mg once daily. Clinical evidence of oropharyngeal candidiasis generally resolves within several days, but treatment should be continued for at least 2 weeks to decrease the likelihood of relapse.
- **Contraindications:**
  - Hypersensitivity to fluconazole.
- Side Effects/Adverse Reactions:
  - *Dermatologic:*
    - Exfoliative skin disorders including Stevens-Johnson Syndrome and toxic epidermal necrosis.
- TMEP Use
  - Fungal Skin Infection Protocol (See Page 26)

Diphenhydramine HCl - See Benadryl (See Page A-5)

  - Vaginal yeast infections
- Preparation procedure/ Other notes
  - Take on an empty stomach. Meals, dairy products, iron-containing products and antacids can impair absorption.
  - Caution patients experiencing CNS symptoms about driving and operating hazardous machinery during therapy
  - Concurrent use of tetracyclines may render oral contraceptives less effective; use alternate source of contraception during therapy
- TMEP Use
  - Gastroenteritis Protocol (See Page 27)
  - Malaria Protocol (See Page 37)

Dulcolax (Bisacodyl)
- Description: Stimulant laxative
- Indications: Used to treat constipation or to clean out the intestinal tract before bowel examinations or bowel surgery.
- Adult Dosage: Swallow the tablets whole with a full glass of water or juice. Do not crush or chew the tablets. The tablets should work within 6 to 10 hours.
  - 5 to 15 mg.
- *Pediatric Dose:*
  - *6 to 12 years: 5 mg, taken at bedtime or in the morning before breakfast to produce evacuation approximately 8 hours later.*
- **Contraindications**:
  - Ileus
  - Intestinal obstruction
  - Acute surgical abdominal conditions like acute appendicitis, acute inflammatory bowel diseases
  - Severe dehydration.
  - Known hypersensitivity to substances of the triarylmethane group.
- Adverse Reactions: Rarely, abdominal discomfort and diarrhea have been reported.
- Preparation Procedure/Other Notes
  - Tablets have a special coating and therefore should not be taken together with milk or antacids. Tablets should be swallowed whole with adequate fluid.
- TMEP Use
  - Constipation/Fecal Impaction Protocol (See Page 17)

Epinephrine (Adrenaline)
- Description: Alpha and beta adrenergic sympathomimetic.
  - First-line drug for anaphylaxis (See ACLS drugs for cardiac therapy)
  - Causes bronchodilatation, vasoconstriction, increases blood pressure.
  - Decreases edema/swelling due to allergic reactions.
    - NOTE:
      - 1:1,000 dilution epinephrine (1mg in 1 cc) is standard pararescue issue.
      - 1:10,000 dilution (1 mg in 10cc) is the standard 'Cardiac' dosage form for IV use.

  - For IV administration, infuse over 30 minutes
- *Pediatric dose*
  - *Not approved in patients < 18 yrs*
- **Contraindications**
  - Hypersensitivity to ertapenem
  - Penicillin allergy with documented severe reaction to PCN
  - Hypersensitivity to other carbapenem antibiotics
  - Anaphylactic reactions to other beta-lactam antibiotics
  - IM: hypersensivity to lidocaine or other anesthetics of amide-type
- Side effects
  - Diarrhea
  - Infused vein phlebitis/thrombophlebitis
  - Nausea/ vomiting
  - Headache
  - Vaginitis
- Adverse reactions
  - Seizures
- Preparation procedure/ Other notes
  - Visually inspect any solution of ertapenem for particulate matter and discoloration prior to use when possible. Solutions range in color from colorless to pale yellow. Variations in color do not affect potency of the drug.
  - IV administration- must be reconstituted prior to administration
    - Do not mix or co-infuse with other medications
    - Do not use diluents containing dextrose
    - Reconstitute the contents of a 1 gm vial of ertapenem with 10 ml of 0.9% NaCl, or bacteriostatic water for injection
    - Shake well to dissolve, and immediately transfer contents to 50 ml of 0.9% NaCl
    - Complete infusion within 6 hrs of reconstitution
  - IM administration - must be reconstituted prior to administration
    - Reconstitute the contents of a 1gm vial of ertapenem with 3.2 ml of 1% lidocaine HCl injection (without epinephrine). Shake vial thoroughly to form solution
    - Immediately withdraw the contents of the vial, and administer by deep IM injection into a large muscle mass (such as the gluteal muscles or lateral part of the thigh)
    - Use the reconstituted IM solution within 1 hr after preparation. **DO NOT ADMINISTER THE RECONSTITUTED IM SOLUTION IV.**
- TMEP Use
  - Acute Abdominal Pain Protocol (See Page 4)
  - Bronchitis/Pneumonia (Severe) Protocol (See Page 14)
  - Cellulitis Protocol (See Page 15)
  - Joint Infection Protocol (See Page 35)
  - Meningitis Protocol (See Page 38)
  - Renal Colic/Kidney Stone Protocol (See Page 43)
  - Sepsis/Septic Shock Protocol (See Page 45)

Doxycycline

- Description: Tetracycline antibiotic
- Indications
  - Rocky Mountain Spotted Fever
  - Typhus
  - Q Fever
  - Rickettsial Fever
  - Mycoplasma Pneumonia
  - H. flu
  - Klebsiella respiratory infections
  - Psittacosis
  - Uncomplicated urethritis
  - Chancroid
  - Leptospirosis
  - Malaria prophylaxis
- Adult dose
  - 100 mg po BID for a variable period depending on the diagnosis
- *Pediatric dose*
  - *Generally, should not be used in children < 8 yrs (except for anthrax) unless other drugs are not available or are contraindicated.* ***Tetracyclines can impair bone formation (reversible with discontinuation) and can cause permanent tooth discoloration (especially with long-term use).***
- **Contraindications**
  - Known allergy to this drug or class of drugs
  - If a patient has an allergy to another tetracycline, proceed with caution as cross-allergy is extremely common
  - Should not be used for streptococcal disease unless organism has been shown to be susceptible
  -  Should not be used for any type of staphylococcal infection
- Side effects
  - Photosensitivity (potential for excessive sunburn)
  - Dizziness
  - Headache
  - Anorexia
  - Nausea
  - Vomiting
  - Diarrhea (rare)
- Adverse reactions
  - Pseudotumor cerebri (benign intracranial hypertension); usually manifested as blurred vision and headache; reversible with discontinuation
  - Esophageal ulcerations (make sure to drink plenty of water when swallowing capsules)
  - Elevated liver transaminases
  - Dermatologic - a variety of reactions have been reported, including Stevens-Johnson Syndrome

- Hypokalemia
- Hyperglycemia
- Carbohydrate intolerance
- TMEP Use
  - Acute Head and Neck Infection, Including Epiglottitis, Protocol (See Page 8)
  - Acute Mountain Sickness Protocol (See Page 9)
  - Anaphylactic Reaction Protocol (See Page 11)
  - Asthma (Reactive Airway Disease) Protocol (See Page 12)
  - Contact Dermatitis (Poison Ivy and Oak) Protocol (See Page 18)
  - High Altitude Cerebral Edema Protocol (See Page 29)
  - High Altitude Pulmonary Edema Protocol (See Page 30)
  - Meningitis Protocol (See Page 38)
  - Smoke Inhalation Protocol (See Page 46)

Dexamethasone - See Decadron (See Previous Page)

Dextrose – See Glutose (See Page A-15)

Diamox (Acetazolamide)

- Description: Non-diuretic antihypertensive (carbonic anhydrase inhibitor)
- Indications: Prevention and/or amelioration of symptoms associated with acute mountain sickness in climbers attempting rapid ascent and/or in those who are very susceptible to acute mountain sickness despite gradual ascent. For maximum benefit begin regimen 7 days prior to ascent. Of minimal benefit in Rx of AMS, HACE, or HAPE
- Dose:
  - 125-250 mg b.i.d., 24 hours prior to ascent, continuing for 48 hours after ascent. Prevention and/or amelioration benefits are nominal once ascent has commenced.
  - If the 500 mg sustained release tablet is used, dose is 500 mg every 24 hours.
- **Contraindications:** Sulfa allergy.
- Side Effects:
  - Paresthesia in extremities
  - Hearing dysfunction/tinnitus
  - Loss of appetite
  - Taste alterations
  - Nausea
  - Vomiting
  - Diarrhea
  - Polyuria
  - Drowsiness
  - Confusion.
-  **Warning**

Fentanyl – See Oral Fentanyl (See Page A-27)

Flagyl (Metronidazole)

- Description: Nitroimidazole antibiotic
- Indications
  - Gastroenteritis presumed due to Giardia
- Adult dose
  - Amebic Dysentery – 750 mg PO TID x 5-10 days
  - Trichomoniasis – 2 grams PO x 1 dose; OR 250 mg PO TID x 7 days
  - Giardia – 250 mg PO TID x 5 -7 days
  - Severe anaerobic infections – 1 gm IV, the 500 mg IV q 6 h
- *Pediatric dose*
  - Safety and efficacy have not been established, except for amebiasis. 35 - 50mg/kg TID for 10 days. Newborns exhibit a reduced capacity to eliminate the drug.
- **Contraindications**
  - Hypersensivity to any component of product, or other nitroimidazole derivatives
  - Pregnancy (first trimester in patients with Trichomoniasis)
  - Administer with caution to patients with CNS diseases
  - Use with caution in patients with history of blood dyscrasias
- Side effects
  - Disulfiram-like reaction including flushing, palpitations, tachycardia, nausea, vomiting may occur with concomitant ethanol ingestion. Refrain from ethanol during therapy and ≥1 to 3 days afterward.
- Adverse reactions
  - Seizures
  - Peripheral neuropathy (numbness or parethesia of extremity)
  - Patients with undiagnosed candidiasis may present more prominent symptoms during therapy; treat with candicidal agent
- TMEP Use
  - Gastroenteritis Protocol (See Page 27)

Fluroquinolones – See Quinolones, Moxafloxacin, Gatifloxacin, Levofloxacin (See Page A-30)

Fluconazole – See Diflucan (See Page A-9)

Gatifloxacin 0.3% ophthalmic liquid (Zymar®)

- Description: Ocular fluoroquinolone
- Indications
- Adult dose
  - Days 1 and 2: instill 1 drop in affected eye(s) every 2 hrs while awake, up to 8 times/day
  - Days 3 to 7: Instill 1 drop in affected eye(s) up to 4 times/day while awake
- *Pediatric dose*
  - *Safety and efficacy in infants < 1 year not established*
  - *Pediatric dosing like adult dosing*
- **Contraindications**
  - Hypersensitivity to any component of product

  - 1:1,000 epinephrine can be diluted to the 1:10,000 form by putting 1 cc of 1:1,000 epinephrine (1 mg epinephrine) in 9 cc's of normal saline (total volume of 10 cc).
- Indications: Anaphylaxis
  - Allergic reactions (mild/moderate/severe)
  - Asthma
- Adult Dose (Epinephrine):
  - Anaphylaxis: 0.3-0.5 mg (3-5 cc of 1:10,000 dilution) IV or 0.3-0.5 mg (0.3-0.5 cc of 1:1,000 dilution) IM
  - Allergic reaction: 0.3-0.5 mg (0.3-0.5 cc of 1:1,000 dilution) SubQ or IM
  - Asthma: 0.3-0.5 mg (0.3-0.5 cc of 1:1,000 dilution) SubQ or IM
- *Pediatric Dose: 0.01 mg/Kg SubQ or IM. Not to exceed 0.5 mg*
- **Contraindications:**
  - **1:1,000 Epinephrine is NOT given IV.**
  - Use caution in patients with a history of heart disease or over the age of 40.
  - Do not inject Epinephrine (or solutions containing Epi) into/near the fingers, toes, nose, ears or penis. Intense vasoconstriction may cause necrosis.
- Side Effects:
  - Cardiac arrhythmias
  - Ventricular Tachycardia
  - Ventricular Fibrillation
  - Angina
  - Hypertension
  - ↑BP
  - Nausea
  - Vomiting
  - Vasoconstriction
- Adverse Reactions
  - Uncontrolled effects on myocardium & arterial system
- TMEP Use
  - Anaphylactic Reaction Protocol (See Page 11)
  - Asthma (Reactive Airway Disease) Protocol (See Page 12)
  - Sepsis/Septic Shock Protocol (See Page 45)

Ertapenem IV (Invanz®)

- Description: Carbapenem antibiotic
- Indications
  - Complicated intra-abdominal infections
  - Complicated skin infections
  - Pneumonia
  - Complicated UTI, including pyelonephritis
  - Acute pelvic infections
  - **Drug of choice for penetrating battlefield trauma**
- Adult dose
  - 1 gm daily
  - May be administered IV up to 14 days or IM injection for up to 7 days

- Side effects
  - Upon instillation, may cause temporary blurring of vision or stinging
  - If stinging, burning, or itching becomes pronounced, or redness, irritation, swelling, decreasing vision or pain persists or worsens, discontinue and consider alternative therapy
  - Lid margin crusting, white crystalline precipitates and foreign body sensation in the eye have been reported
  - Bad/bitter taste in mouth
  - Nausea
- Adverse reactions
  - Discontinue at first sign of skin rash or other allergic reaction
  - Corneal staining
  - Tearing and photophobia
- Preparation procedure/ Other notes
  - To instill in eye, tilt head back, place medication in conjunctival sac and close eye(s).
  - Apply light finger pressure on lacrimal sac for 1 minute following instillation
  - To avoid bottle contamination, do not touch tip of container to any surface. Replace cap after use.
  - In general, contact lenses should not be worn during therapy
- TMEP Use
  - Corneal Abrasion, Corneal Ulcer, Conjunctivitis Protocol (See Page 19)
  - Otis Externa Protocol (See Page 39)

Glucose – See Glutose (See Below)

Glutose (Dextrose, glucose)
- Description: Carbohydrate
- Route: Oral
- Indications: Altered mental status caused by hypoglycemia defined as;
  - Adults:
    - Diabetics = fingerstick blood glucose analysis less than 110mg/dL
    - Non-diabetics = fingerstick blood glucose analysis less than 80mg/dL
  - Children:
    - Diabetics = fingerstick blood glucose analysis less than 90mg/dL
    - Non-diabetics = fingerstick blood glucose analysis less than 60mg/dL
- Adult Dose
  - Full tube given in small doses (25-50 gm) - standing order
- *Pediatric Dose:*
  - *0.5 gm/kg in small doses - standing order*
- Drug Action: Increases blood glucose level
- Onset:1 minute
- Duration: Depends on the degree of hypoglycemia
- Precautions: Assure gag reflex is present
- Side Effects:
  - Aspiration
- **Contraindications:**

  - Refer to medical emergencies if blood and/or mucus are present in stool, or diarrhea is associated with fever (infectious diarrhea).
- Dose: 2 capsules (4 mg) first dose, then 1 capsule (2 mg) after every unformed stool, not to exceed 10 mg (5 capsules) in 24 hours. Use only if control of diarrhea is critical for continued operations.
- **Contraindications:**
  - Acute dysentery.
  - Not for use in children < 12 y.o.
- Side Effects:
  - Abdominal pain/distention
  - Nausea
  - Vomiting
  - Severe constipation
  - Drowsiness
  - Dizziness.
- Adverse Reactions: Hypersensitivity
- TMEP Use
  - Gastroenteritis Protocol (See Page 27)

Invanz® - See Ertapenem IV (See Page A-12)

Keflex (Cephalexin)
- Description: Broad spectrum bactericidal oral antibiotic (1st generation cephalosporin) effective against gram positive and basic gram negative organisms.
- Indications: Infections of the respiratory tract, genitourinary tract, and soft tissue Infections.
- Adult Dose:
  - 250 mg to 1 gm PO q. 6hrs.
- *Pediatric Dose:*
  - *6 - 12 mg/Kg PO q6h.*
- **Contraindications**
  - Use caution in patients with a history of Penicillin allergy
  - Allergy to Cephalosporin class of drugs
  - Hepatic dysfunction
  - Liver dysfunction
- Side Effects:
  - Dizziness
  - Headache
  - Malaise
  - Nausea
  - Vomiting
  - Diarrhea
  - Urticaria
  - Adverse Reaction:
  - Neutropenia
  - Eosinophilia

Loperamide HCl – See Imodium (See Page A-16)

Macrolide Class of Antibiotics – See Azithromycin (Z-Pak®) (See Page A-35)

Malarone (Atovaquone 250mg/ proguanil 100mg)
- Description: Antimalarial
- Indications
  - Prophylaxis and treatment of *Plasmodium falciparum malaria*
- Adult dose
  - 
  - There are pediatric tablets as well as adult tablets
  - Prophylaxis
    - Start treatment 1 or 2 days prior to entering malaria endemic area and continue daily during the stay and for 7 days after return
    - 1 tablet (adult strength) daily
  - Treatment
    - 4 tablets (adult strength; total daily dose atovaquone 1 gm/ 400 mg proguanil) as a single daily dose for 3 consecutive days
- *Pediatric dosage*
  - 
  - *There are pediatric tablets as well as adult tablets*
  - *Tablets may be crushed and mixed with condensed milk just prior to administration for those having difficulty in swallowing tablets*
  - *Prophylaxis dosing based on body weight*
    - *Safety and efficacy for prophylaxis have been established for children >11kg*

Dosage of atovaquone/proguanil in prevention of malaria in pediatric patients		
Weight (kg)	***Atovaquone/proguanil total daily dose***	***Dosage regimen***
11 to 20	*62.5 mg/ 25 mg*	*1 pediatric tablet daily*
21 to 30	*125 mg/ 50 mg*	*2 pediatric tablets as a single daily dose*
31 to 40	*187.5 mg/75 mg*	*3 pediatric tablets as a single daily dos*
>40	*250 mg/ 100 mg*	*1 tablet (adult strength) as a single daily dose*

  - *Treatment dosing based on body weight*
    - *Safety and efficacy for treatment have been established for children > 5kg*

Dosage of atovaquone/proguanil in treatment of malaria in pediatric patients		
Weight (kg)	***Atovaquone/proguanil total daily dose***	***Dosage regimen***

  - Prevention of mild to moderate malaria caused by *Plasmodium falciparum* (including chloroquine-resistant strains) and *P. vivax*
  - Treatment of mild to moderate malaria caused by Mefloquine-susceptible strains of *P. falciparum* (both chloroquine-susceptible and resistant strains) and *P. vivax*
- Adult dose
  - Prophylaxis: 250 mg once weekly
    - Initiate therapy 1-2 weeks prior to departure to endemic area
    - Dose must be administered on same day of week
    - Continue prophylaxis for 4 additional weeks upon return from endemic area
  - Treatment: 5 tablets (1250 mg) given as a split dose taken 6-8 hours apart.
  - Do not take on empty stomach
  - Take with at least 240 ml (8 oz.) glass water
- *Pediatric dose*
  - *Prophylaxis:*
    - *Children > 45 kg: one 250mg tablet should be taken in children*
    - *Children <45kg: weekly dose decreases in proportion to body weight (3 to 5 mg/kg once weekly):*
      - *30-45 kg: ¾ tablet*
      - *>20-30 kg: ½ tablet*
      - *Up to 20 kg: ¼ tablet*
      - *Experience with Mefloquine in infants < 3 months or weighing < 5mg is limited*
    - *Initiate therapy 1 week prior to departure to endemic area*
    - *Dose must be administered on same day of week*
    - *Continue prophylaxis for 4 additional weeks upon return from endemic area*
  - *Treatment: 20-25 mg/kg for nonimmune patients*
    - *Splitting the dose into 2 doses taken 6 to 8 hrs apart may reduce adverse effects*
    - *Treatment in children has been associated with early vomiting; if patient vomits within 30 minutes of dose and a significant loss of drug is suspected by inspection of emesis, re-dose patient with full dose; if vomiting occurs within 30 to 60 minutes, administer ½ the full dose.*
    - *Do not administer on an empty stomach and give with ample water*
    - *For very young patients, dose may be crushed, mixed with water or sugar water and may be administered via oral syringe*
    - *Experience in infants < 3 months or < 5 kg is limited*
- **Contraindications**
  - Hypersensitivity to related compounds (e.g. quinine, quinidine)
  - Patients with:
    - Active depression
    - Recent history of depression
    - Generalized anxiety disorder
    - Psychosis
    - Schizophrenia or other major psych disorders
    - History of convulsions
- Side effects
  - Cardiac rhythm disturbances

- Anemia
- Paresthesias
- Abdominal cramps
- Skin disorders

- TMEP Use
  - Acute Dental Pain (See Page 7)

Larium – see Mefloquine (See Page A-20)

Lidocaine HCL (Xylocaine)

- Description: Local anesthestic, See ACLS drugs for cardiac therapy.
- CAUTION: Some lidocaine solutions contain 1:10,000 epinephrine. This causes intense vasoconstriction, and prolongs the duration of the anesthesia. These solutions are identified by a red label or red lettering on the label. **DO NOT use solutions containing epinephrine on or near the fingers, toes, nose, ears or penis.**
- Indications:
  - Local anesthetic: Suturing, debridement, nerve blocks, thoracostomy or other similar procedures. Duration of anesthesia is 30-60 minutes.
  - Cardiac Use: Use ACLS Protocols
- Dose (Local anesthesia): To desired effect. Maximum single adult dose is 4.5 mg/Kg or 300 mg (15 cc's of the 2% solution contains 300 mg lidocaine).
  - NOTE 1: This is a different max dose than with IV lidocaine for ACLS use.
  - NOTE 2: 2% lidocaine contains 20 mg of lidocaine per cc. Diluting 2% lidocaine 1:1 with normal saline gives a 1% solution (10 mg per cc) that is just as effective as the 2% solution.
- **Contraindications:**
  - 2nd degree, 3rd degree AV block
  - Hypotension
  - Stokes-Adams Syndrome
- Side Effects:
  - Slurred speech
  - Altered mental status
  - Tinnitus
  - Edema
- Adverse Reactions:
  - Dermatologic reactions
  - Status asthmaticus
  - Anaphylaxis
  - Seizures
- TMEP Use
  - Back Pain (Acute, Musculoskeletal, Severe) Protocol (See Page 13)
  - Cutaneous Abscess Protocol (See Page 21)
  - Ingrown Toenail Protocol (See Page 34)

- Absent gag reflex
- Patients who are unable to protect their own airway
- Patients who are unable to swallow

- TMEP Use
  - Acute Behavioral Changes Protocol (See Page 6)
  - Loss of Consciousness (without seizures) Protocol (See Page 36)
  - Seizures Protocol (See Page 44)

Hespan (Hetastarch in NaCl) Plasma Volume Expander (Artificial Colloid)
Hextend (Hetastarch in Lactated Electrolyte Solution)

- Description: Plasma Volume Expander (Artificial Colloid)
- Both Hespan and the newer product Hextend are artificial colloids and are used to expand the plasma volume. The major advantage over crystalloids is that these products give more volume expansion for a longer period of time for the same infused volume. These products are not blood or plasma replacements, they have no oxygen carrying capacity, and they have no coagulation properties. **These products should not be used to treat dehydrated patients.**
- Indications: Treatment of shock secondary to hemorrhage.
- Dose:
  - Patient in shock, bleeding not controlled: hold fluid and control bleeding.
  - Patient in shock, bleeding controlled: start 500 cc of Hespan/Hextend IV, check for improvement in BP (titrate to SBP of 85) or improved mentation. Hold further fluid when either improvement point is met.
  - Patient still in shock after first 500 cc of Hespan/Hextend: start second 500 cc bag and titrate to improvement.
  - Do not give more than 1 liter (1000 cc) of Hespan or Hextend to any casualty.
- **Contraindications:**
  - Known bleeding disorders or uncontrolled hemorrhage
  - CHF
  - Renal impairment
  - Not for use in children under 12 years
  - Dehydration
  - Use with caution in pregnancy.
- Side Effects:
  - Nausea/vomiting
  - Peripheral and facial edema
  - Urticaria
  - Flushing chills
- Adverse Reactions:
  - Severe anaphylaxis (rare)

Ibuprofen – See Motrin (See Page A-23)

Imodium (Loperamide HCl)

- Description: Antidiarrheal (opioid)
- Indications: Treatment of acute diarrhea. For use in acute, non-invasive diarrhea only.

- Exercise caution when performing activities requiring alertness and fine motor coordination such as driving, piloting, operating heavy machinery as dizziness, loss of balance have occurred with Mefloquine during and following its use

- Adverse Reactions:
  - Reactions (symptoms) attributable to Mefloquine cannot be distinguished from symptoms of malaria. Due to long half-life of the drug, symptoms could persist for several weeks following the last dose.
  - Prophylaxis
    - Vomiting (3%)
    - Dizziness
    - Syncope (fainting)
    - Extrasystoles (skipped hearbeats; <1%)
  - Treatment
    - Dizziness, headache
    - Myalgia (muscle aches)
    - Nausea, vomiting
    - Fever, chills
    - Diarrhea
    - Skin rash
    - Abdominal pain
    - Fatigue
    - Loss of appetite
    - Tinnitus (ringing in the ears)
- Preparation procedure/ Other notes
  - Patients given Mefloquine for *P. vivax* are at high risk for relapse and should subsequently receive Primaquine.
  - There is insufficient clinical data to document Mefloquine's effect on malaria caused by *P. ovale* or *P. malariae*
  - Liver impairment can prolong the elimination of Mefloquine
  - When Mefloquine is taken concurrently with oral live typhoid vaccines, attenuation of immunization cannot be excluded. Therefore, complete attenuated oral live vaccinations at least 3 days before starting Mefloquine
  - Anticonvulsant blood levels (e.g. phenytoin [Dilantin®], valproic acid [Depakote®], carbamazepine [Tegretol®], and phenobarbital) may be reduced by Mefloquine and therefore risk for convulsions may increase in patients with history of epilepsy. Mefloquine itself has also been associated with convulsions in the absence of anticonvulsant treatment
- TMEP Use
  - Malaria Protocol (See Page 37)

Meloxicam – See Mobic (See A-23/Next Page)

Metronidazole – See Flagyl (See Page A-14)

5 to 8	*125 mg/50 mg*	*2 tablets (pediatric strength) daily for 3 consecutive days*
9 to 10	*187.5 mg/75 mg*	*3 tablets (pediatric strength) daily for 3 consecutive days*
11 to 20	*250 mg/ 100 mg*	*1 tablet (adult strength) daily for 3 consecutive days*
21 to 30	*500 mg/200 mg*	*2 tablets (adult strength) as single daily dose for 3 consecutive days*
31 to 40	*750 mg/300 mg*	*3 tablets (adult strength) as single daily dose for 3 consecutive days*
>40	*1 gm/400 mg*	*4 tablets (adult strength) as single daily dose for 3 consecutive days*

- **Contraindications**
  - Hypersensitivity to atovaquone, proguanil
  - Prophylaxis in patients with severe renal impairment (Cr CL < 30mL/min) unless potential benefits outweigh risks of non-treatment (progaunil accumulates in severe renal failure)
- Side effects
  - Headache
  - Abdominal pain
  - Nausea/ vomiting/diarrhea
  - Dizziness
  - Cough (pediatrics)
- Adverse reactions
  - Liver transaminase elevations
  - Possible association with seizures and psychotic events (e.g. hallucinations)
  - Cutaneous reactions, including photosensitivity, erythema multiforme and Stevens-Johnson syndrome
- Preparation procedure/ Other notes
  - Take daily dose at the same time every day with food or milk
  - If vomiting occurs within 1 hr of dosing, repeat the dose
  - Treatment has not been evaluated for treatment of cerebral malaria or other severe manifestations of complicated malaria
  - Absorption may be reduced in patients with diarrhea or vomiting. May need to add antiemetic to prevent vomiting.
  - Include protective clothing, insect repellants, bed nets as important components of malaria prophylaxis
  - If a dose is skipped, take it as soon as possible, and then return to normal schedule. Do not double the next dose.
- TMEP Use
  - Malaria Protocol (See Page 37)

Mefloquine (Larium®)

- Description: antimalarial agent
- Indications

Mobic (Meloxicam)
- Description: NSAID
- Indications:
  - Relief of the signs and symptoms of osteoarthritis and rheumatoid arthritis.
  - Mild to moderate pain relief
- Dosage:
  - 7.5 mg or 15 mg daily. The maximum recommended daily oral dose is 15 mg.
- **Contraindications**:
  - Allergy to NSAID class of drugs, Aspirin.
- Side Effects:
  - Allergic reaction
  - Anaphylactoid reactions including shock
  - Face edema
  - Fatigue
  - Fever
  - Hot flushes
  - Malaise
  - Syncope
  - Weight decrease
  - Weight increase
  - Dyspepsia
- TMEP Use
  - Pain Management Protocol (See Page 41)

Motrin (Ibuprofen)
- Description: NSAID, analgesic, antipyretic
- Indications:
  - Mild to moderate pain
  - Arthritis
- Dose:
  - 200-800 mg PO t.i.d. or q.i.d. Not to exceed 2400 mg/day (800 mg TID)
- **Contraindications:**
  - NOTE: Should not be given to pts with a history of aspirin sensitivity or severe asthma
  - Penetrating trauma
  - Suspected internal bleeding
  - Suspected intracranial bleeding
  - Pregnancy
  - Nursing mothers.
- Side Effects:
  - Nausea
  - Vomiting
  - Headache
  - Dizziness
  - Drowsiness
- Adverse Reactions:

Moxifloxacin (Avelox)
- Description: 4th generation quinolone
- Broad spectrum antibiotic with broad anaerobic coverage for PO/IV administration). Inhibits DNA preventing cellular replication and division
- Indications:
  - Community-acquired pneumonia (CAP), including CAP caused by multi-drug resistant *Streptococcus pneumoniae**
  - Complicated skin and skin structure infections, including diabetic foot infections
  - Complicated intra-abdominal infections, including polymicrobial infections such as abscesses
- Dose: 400 mg/day PO/IV
  - IV infusion should be over 60 minutes
  - Avoid use with antacids;
  - Decrease dose in renal impairment
  - Avoid using with antiarrhythmics - May cause prolonged QT interval
- **Contraindications:**
  - Hypersensitivity to fluroquinolones
  - Patients < 18 years old
  - Pregnancy and lactation
  - Uncorrected hypokalemia
- Side Effects:
  - Headache
  - Nausea
  - Diarrhea
  - Photosensitivity
  - Insomnia
  - Vertigo,
- Adverse Reactions:
  - Tendon rupture
  - Use cautiously with NSAIDs due to increased CNS stimulation
  - Prolonged QT interval
  - Abnormal dreams
  - Pseudomembranosus colitis
- Preparation procedure/ Other notes
  - Oral antacids decrease absorption of the Moxafloxacin when taken orally
  - Visually inspect any solution of Moxafloxacin for particulate matter and discoloration prior to use. Solution must be clear.
  - IV administration- must be reconstituted prior to administration
    - Do not mix or co-infuse with other medications
    - At cool temperatures precipitation may occur, which will re-dissolve at room temperature.
- TMEP Use
  - Acute Head and Neck Infection, Including Epiglottitis, Protocol (See Page 8)
  - Bronchitis/Pneumonia (Mild) Protocol (See Page 14)

  - Certain types of chest pain (angina). It may help to increase exercise tolerance and decrease the frequency of angina attacks. Use other medications (e.g., sublingual nitroglycerin) to relieve attacks of chest pain.
- Dose
  - 10 mg po, repeat x 1 in 8 hours. SEE TMEP.
- Side Effects: Primarily vasodilatory in nature (hypotension)
- Warning:
  - Although, in most patients, the hypotensive effect of nifedipine is modest and well tolerated, occasional patients have had excessive and poorly tolerated hypotension.
- TMEP use
  - High Altitude Pulmonary Edema Protocol (See Page 30)

Ondansetron – See Zofran (See Page A-36)

Oral Fentanyl (Actiq Lozenge)
- Description: Opioid. Oral transmucosal fentanyl citrate.
- Indications: Severe battlefield related trauma pain
- Dosage: 400-800 mcg.
  - The blister package should be opened with scissors immediately prior to product use. The patient should place the ACTIQ unit in his or her mouth between the cheek and lower gum, occasionally moving the drug matrix from one side to the other using the handle. The ACTIQ unit should be sucked, not chewed. A unit dose of ACTIQ, if chewed and swallowed, might result in lower peak concentrations and lower bioavailability than when consumed as directed.
  - The ACTIQ unit should be consumed over a 15-minute period. Longer or shorter consumption times may produce less efficacy than reported in ACTIQ clinical trials. If signs of excessive opioid effects appear before the unit is consumed, the drug matrix should be removed from the patient's mouth immediately and future doses should be decreased.
- **Treatment of Overdose**:
  - Ventilatory support
  - Intravenous access
  - Narcan (naloxone) or another opioid antagonist may be warranted in some instances, but it is associated with the risk of precipitating an acute withdrawal syndrome.
- Side Effects: The most serious adverse effects associated with all opioids are:
  - Respiratory depression (potentially leading to apnea or respiratory arrest)
  - Circulatory depression
  - Hypotension
  - Shock
  - All patients should be followed for symptoms of respiratory depression.
- TMEP Use
  - Acute Abdominal Pain Protocol (See Page 4)
  - Pain Management Protocol (See Page 41)

  - Drowsiness, sedation, sleepiness
  - Anticholinergic effects – dry mouth, urinary retention, dry eyes, constipation
  - Photosensitivity
  - Bradycardia.
  - Urticaria,
  - Sedation
  - Respiratory Depression
  - Hypotension
  - Chest pain
- Adverse Reactions
  - Lowers seizure threshold
  - Extrapyramidal symptoms, dystonia
  - May exacerbate glaucoma
  - May exacerbate hypertension
  - Cholestatic jaundice
  - Arrhythmias
- Warning
  - Intra-arterial injection may result in gangrene of the affected extremity
  - Because of the potential for Phenergan to reverse epinephrine's vasopressors effect, epinephrine should **NOT** be used to treat hypotension associated with Phenergan overdose.
- Preparation procedure/Other Notes
  - Store at room temperature, between 15°-25° C (59°-77° F).
  - Protect from light.
  - Use carton to protect contents from light.
  - Do not use if solution is discolored or contains a precipitate.
  - IV administration may be hazardous and is **NOT** recommended
- TMEP Use
  - Acute Abdominal Pain Protocol (See Page 4)
  - Acute Mountain Sickness Protocol (See Page 9)
  - Flank Pain Protocol (See Page 25)
  - Gastroenteritis Protocol (See Page 27)
  - Headache Protocol (See Page 28)
  - HIV Post Exposure Prophylaxis Protocol (See Page 31)
  - Hyperthermia Protocol (See Page 32)
  - Meningitis Protocol (See Page 38)
  - Pain Management Protocol (See Page 41)
  - Renal Colic/Kidney Stones Protocol (See Page 43)

Primaquine
- TMEP Use
  - Malaria Protocol (See Page 37)

- Cellulitis Protocol (See Page 15)
- Cutaneous Abscess Protocol (See Page 21)
- Epistaxis Protocol (See Page 24)
- Gastroenteritis Protocol (See Page 27)
- Ingrown Toenail Protocol (See Page 34)
- Meningitis Protocol (Prophylaxis) (See Page 38)
- Otitis Externa Protocol (See Page 39)
- Otitis Media Protocol (See Page 40)
- Renal Colic/Kidney Stone Protocol (See Page 43)
- Urinary Tract Infection Protocol (See Page 50)

Mupirocin ointment 2% - See Bactroban (See Page A-4)

Naloxone HCl – See Narcan (See Below)

Narcan (Naloxone HCl)
- Description: Narcotic antagonist.
- Indications: Known or suspected narcotic induced respiratory depression.
  - WARNING Have available when using morphine.
- Adult Dose: 0.4-2 mg IV. Repeat q. 2-3 min/prn.
  - Duration is 20-40 minutes (< duration of action of morphine). Repeat doses of may be necessary after 20-30 minutes.
- *Pediatric Dose: 0.01 mg/Kg dose IM, IV or SQ q. 2-3 min.*
  - *If initial dose does not result in clinical response, increase dose up to 0.1 mg/Kg*
  - *If no response after 10mg has been administered, diagnosis of narcotic induced toxicity should be questioned.*
- Side Effects:
  - In narcotic dependent patient, withdrawal symptoms may be precipitated.
- Adverse Reactions: With higher than recommended doses:
  - Nausea
  - Vomiting
  - Tachycardia
  - Hypertension
  - Tremors
- TMEP Use
  - Loss of Consciousness (without seizures) Protocol (See Page 36)

Nelfinavir – See Viracept (See Page A-34)

Nifedipine (Procardia)
- Description: An antianginal drug belonging to a class of pharmacological agents, the calcium channel blockers. It works by relaxing blood vessels so blood can flow more easily.
- Indications

- Prolonged bleeding time
- Tinnitus
- Edema
- Peptic ulcer
- TMEP Use
  - Pain Management Protocol (See Page 41)

Morphine Sulfate (opiod)
- Description: Narcotic analgesic Alters perception of pain and emotional response to pain.
- WARNING
  - Have Narcan available when using Morphine.
  - Alters perception & emotional response to pain
- Indications:
  - Severe pain
  - Pain from cardiac ischemia
- **Contraindications:**
  - Respiratory depression
  - Hypotension
  - Head injury
- Adult Dose: 4-15 mg IV/IM slow push. Titrate to response.
- *Pediatric Dose: 0.1-0.2 mg/Kg IM/IV. Do not exceed 15 mg.*
- Side Effects:
  - ↓ RR
  - Hypotension
  - Bradycardia
  - Nausea
  - Vomiting
  - Dizziness
  - Pruritus
  - Skin flushing
- Adverse Reactions:
  - Seizures with large doses
  - Constipation
  - Ileus
  - Urinary retention
- TMEP Use
  - Chest Pain of Possible Cardiac Origin (See Page 16)
  - Flank Pain Protocol (See Page 25)
  - Pain Management Protocol (See Page 41)
  - Pulmonary Embolus Protocol (See Page 42)

Procardia – See Nifedipine (See Page A-26)

Promethazine HCl – See Phenergan (See Page A-28)

Proventil – See Albuterol Inhaler (See Page A-2)

Pseudoephedrine – See Sudafed (See Page A-31)

Quinine
- TMEP Use
  - Malaria Protocol (See Page 37)

Quinolones – General Antimicrobial Spectrum
- 1ST Generation: Gram negative (excluding Pseudomonas), urinary tract only.
  - *Example nalidixic acid*
- 2nd Generation: Gram negative (including Pseudomonas); Staph aureus but not Pneumococcus; some atypicals.
  - *Examples: ciprofloxacin, norfloxacin, ofloxacin*
- 3rd Generation: Gram negative (including Pseudomonas); gram positive (including Staph aureus and Pneumococcus); expanded atypical coverage.
  - *Example: levofloxacin*
- 4th Generation: Same as 3rd generation: plus broad anaerobic coverage.
  - *Examples: gatfloxacin, moxifloxacin, trovafloxacin*

Ranitidine – See Zantac (See Page 35)

Rocephin (Ceftriaxone Sodium)
- Description: 3rd generation cephalosporin
- Broad spectrum bactericidal antibiotic for IV/IM use.
- Indications: Serious infections of the lower respiratory tract (i.e. pneumonia); urinary tract; skin infections; intra-abdominal infections (especially penetrating abdominal trauma); penetrating trauma to the extremities; & CNS infections
- **Contraindications:**
  - Use caution in patients with a history of
    - Penicillin allergy
    - Hepatic dysfunction
    - Liver dysfunction
- Adult Dose:
  - 1-2 gm IM/IV daily or in divided doses bid; Max dose 4 gm/day
- *Pediatric Dose:*
  - *50-75 mg/Kg given in divided doses q12 hours, max dose 2 gm/day*
- Side Effects:
  - Headaches
  - Dizziness
  - Nausea
  - Vomiting

Oxymetazline HCl – See Afrin Nasal Spray (See Page A-2)

Phenergan (Promethazine HCl)
- Description: Phenothiazine class. An H_1 receptor blocking agent. Antihistamine, sedative, antimotion-sickness, antiemetic, and anticholinergic effects. The duration of action is generally from four to six hours. The major side reaction of this drug is sedation.
- Indications:
  - Antihistamine for allergies
  - Anaphylactic reactions in addition to epinephrine.
  - Nausea
  - Vomiting
  - Motion sickness.
  - Antiemetic therapy
- Adult Dose
  - Oral Dose
    - The average adult dose is 25 mg q 4 h.
    - Motion Sickness: The average adult dose is 25 mg taken twice daily. The initial dose should be taken one-half to one hour before anticipated travel and be repeated 8 to 12 hours later, if necessary. On succeeding days of travel, it is recommended that 25 mg be given on arising and again before the evening meal.
  - Parenteral: Administered by deep IM injection
    - Nausea/vomiting: 12.5 mg to 25 mg q 4-6 h PRN. If taking narcotics or barbiturates, it may be necessary to reduce doses of those medications to prevent excess somnolence.
    - Motion Sickness: 12.5 mg to 25 mg; peat PRN up to 4 times/day
- *Pediatric Dose:*
  - *Oral Dose:*
    - *Nausea / Vomiting*
      - *2-12 years old; 1.1 mg/kg of body weight. Do not exceed half of the suggested adult dose.*
      - *Children < 2 years old: Contraindicated*
    - *Motion Sickness: Contraindicated in children*
  - *Parenteral: Administered by deep IM injection*
    - *Nausea / Vomiting :*
      - *2- 12 years old: 12.5 mg to 25 mg q 4-6 h PRN. If taking narcotics or barbiturates, reduce the dose to 1.1 mg/kg.*
    - *Motion Sickness: Contraindicated in children*
- **Contraindications**
  - Subcutaneous injection may result in tissue necrosis
  - Children < 2 years old
  - Comatose states
  - Antiemetics should not be used in vomiting of unknown etiology in children.
  - Asthma
- Side Effects

- Diarrhea
- Abdominal cramps
- Urticaria
- ↑ temperature

- Adverse Reactions:
  - Eosinophilia
  - Thrombocytosis
  - Leukopenia
  - Injection Site
    - Pain
    - Induration
    - Sterile abscess
    - Tissue sloughing
    - Phlebitis
  - Thrombophlebitis with IV use
- Preparation procedure:
  - Withdraw 10cc NaCl from a 100cc bag. Inject 10cc NaCl into 1 gm Rocephin vial. Mix.
  - Withdraw entire contents of vial and inject into original 100cc NaCl IV bag. Mix.
  - Piggyback with running IV.
  -  If giving IM, reconstitute with 1% lidocaine **WITHOUT** epinephrine.
- TMEP Use
  - Acute Abdominal Pain Protocol (See Page 4)
  - Acute Dental Pain Protocol (See Page 7)
  - Acute Head and Neck Infection, Including Epiglottitis, Protocol (See Page 8)
  - Bronchitis/Pneumonia (Severe) Protocol (See Page 14)
  - Cellulitis Protocol (See Page 15)
  - Flank Pain Protocol (See Page 25)
  - Joint Infection Protocol (See Page 35)
  - Meningitis Protocol (See Page 38)
  - Renal Colic/Kidney Stone Protocol (See Page 43)
  - Sepsis/Septic Shock Protocol (See Page 45)

Sudafed (Pseudoephedrine)

- Description: Adrenergic class. Primary activity though α-effects on respiratory mucosal membranes reducing congestion, hyperemia, edema, and minimal bronchodilation secondary to β-effects.
- Indications:
  - Nasal decongestant
  - Adjunct in otitis media with antihistamines
- Adult Dose:
  - 30-60 mg q4-6h PO
- *Pediatric Dose:*
  - *6-12 years old: 30 mg/dose PO q 4-6 h*

- TMEP Use
  - Corneal Abrasion, Corneal Ulcer, Conjunctivitis Protocol (See Page 19)

Tetracycline Class of Antibiotics – See Doxycycline (See Page A-10)

Tylenol (Acetaminophen)

- Description: Nonnarcotic analgesic and antipyretic. Blocks generation of pain impulses in the CNS by preventing sensitization of pain receptors.
- Indications: Mild Pain or fever
- **Contraindications:**
  - Individuals with hypersensitivity to drug.
  - Cautious use in history of excess alcohol use
  - Chronic Liver Damage
- Dose:
  - 325-650 mg PO q 4-6 hours; or 1 gram PO every 6-8 hours
- Side Effects:
  - Rash
  - Urticaria,
- Adverse Reactions:
  - Hemolytic anemia
  - Liver damage
- TMEP Use
  - Acute Abdominal Pain Protocol (See Page 4)
  - Acute Mountain Sickness Protocol (See Page 9)
  - Back Pain (Acute, Musculoskeletal, Severe) Protocol (See Page 13)
  - Bronchitis/Pneumonia Protocol (See Page 14)
  - Constipation/Fecal Impaction Protocol (See Page 17)
  - Corneal Abrasion, Corneal Ulcer, Conjunctivitis Protocol (See Page 19)
  - Headache Protocol (See Page 28)
  - Ingrown Toenail Protocol (See Page 34)
  - Joint Infection Protocol (See Page 35)
  - Malaria Protocol (See Page 37)
  - Meningitis Protocol (See Page 38)
  - Otitis Externa Protocol (See Page 39)
  - Otitis Media Protocol (See Page 40)
  - Pain Management Protocol (See Page 41)
  - Renal Colic/Kidney Stone Protocol (See Page 43)
  - Subungual Hematoma Protocol (See Page 48)
  - Urinary Tract Infection Protocol (See Page 50)

Valium (Diazepam): Benzodiazepine

- Description: General CNS depressant (Anticonvulsant/sedative).
- Indications:
  - Acute anxiety
  - Seizures
  - Status epilepticus

Z- Pak - See Zithromycin (See Below)

Zantac (Ranitidine)

- Description: H-2 blocker; ↓ secretion of stomach acid
-  NOTE: Drug Interactions: ↓absorption of oral diazepam.
- Indications:
  - Gastric and/or peptic ulcers
  - Upper GI bleeds
  - Prevention of stress ulcers in burn victims or patients on steroid treatment.
  - Drug of choice for treatment of gastric or peptic ulcers.
  - Adjunct in treatment of urticaria and anaphylaxis.
- Adult Dosage:
  - 50 mg IV or IM q. 6-8 hours for ulcers, burns, steroid use, upper GI bleeds, Urticaria or anaphylaxis.
  - Oral dose: 150 mg b.i.d. for ulcer, urticaria.
- *Pediatric Dose: 1.5 mg/Kg IV x 1, then 0.75 mg/Kg IV every 12 hours*
- **Contraindications:** Known/suspected liver disease
- Side Effects:
  - Headache
  - Diarrhea
  - Constipation
  - Muscle aches
  - Vertigo
  - Malaise
  - Dry mouth
  - Nausea
  - Vomiting
- Adverse Reactions:
  - Thrombocytopenia
  - Liver toxicity
- TMEP Use
  - Anaphylactic Reaction Protocol (See Page 11)

Zithromax (Z-Pac, Azithromycin)

- Description: Macrolide antibiotic
- Indications:
  - Acute bacterial sinusitis
  - Mild community acquired pneumonia
  - Chancroid (Genital ulcer disease)
  - Pharyngitis/tonsillitis as alternative drug choice to first line therapy
  - Uncomplicated skin infections
  - Urethritis
- Adult dose

    - *>12 years of age: 4-8 mg PO BID up to 48 hours*
  - *IV Dose:*
    - *Little information available on dosing in children <= 2 yrs*
    - *2-12 years old and <40 kg: single .1 mg/kg IV dose over 2-5 minutes*
    - *2-12 Years and > 40 kg: 4 mg IV over 2-5 minutes*

- **Contraindications**
  - Hypersensitivity to any component of product
- Side effects
  - Anxiety
  - Dizziness
  - Sedation/drowsiness
  - Headache
  - Malaise/fatigue
  - Chills/shivering
  - Constipation or diarrhea
  - Fever
  - Pruritis
  - Urinary retention
  - Musculoskeletal pain
  - Extrapyramidal symptoms
  - Arrhythmias
  - Hypotension
  - Chest pain
- Adverse reactions
  - Elevated liver transaminases
  - Rare cases of hypersensitivity, sometimes severe (anaphylaxis) have been reported
  - Syncope (rare)
  - Grand mal seizures (rare)
  - Bronchospasm (rare)
  - Transient blurred vision (rare)
  - Hypokalemia (rare)
- TMEP Use
  - Acute Abdominal Pain Protocol (See Page 4)
  - Acute Mountain Sickness Protocol (See Page 9)
  - Flank Pain Protocol (See Page 25)
  - Gastroenteritis Protocol (See Page 27)
  - Headache Protocol (See Page 28)
  - HIV Post Exposure Prophylaxis Protocol (See Page 31)
  - Hyperthermia Protocol (See Page 32)
  - Meningitis Protocol (See Page 38)
  - Pain Management Protocol (See Page 41)
  - Renal Colic/Kidney Stone Protocol (See Page 43)

Zymar – See Gatifloxacin 0.3% ophthalmic liquid (See Page A-14)

- Relaxation of skeletal muscle
- Drug of choice for treatment of convulsions associated with chemical agents or organophosphates. NOTE: Successful treatment of convulsions from organophosphate or chemical exposure may require mass quantities and repeated administration of Diazepam (Valium).
- Has **NO** analgesic or anesthetic properties.
- Overdose may be reversed w/ Romazicon (Flumazenil)

- Dose:
  - Status Epilepticus: 5-10 mg IV slow push
  - Acute anxiety: 5-15 mg IV slow push
  - Relaxation of skeletal muscle: 5-15 mg IV slow push
  - Chemical Warfare: 10-15 mg IV slow push
    - Auto injection Diazepam should be used for seizures induced by chemicals
- **Contraindications:**
  - Head injury
  - ↓ BP
  - Acute narrow angle glaucoma
  - 
    Has additive effect with other respiratory depressants (morphine, phenergan and alcohol). Be prepared to perform BLS.
- Side Effects:
  - ↓ BP
  - ↓ Respirations
  - Drowsiness
  - Venous irritation
  - Pain at injection site
  - N & V
- Adverse Reactions:
  - Bradycardia
  - CV collapse
  - Amnesia
  - Abdominal discomfort
- TMEP Use
  - Acute Behavioral Changes Protocol (See Page 6)
  - Back Pain (Acute, Musculoskeletal, Severe) Protocol (See Page 13)
  - Seizures Protocol (See Page 44)

Ventolin – See Albuterol Inhaler (See Page A-3)

Viracept (Nelfinavir)
- TMEP Use
  - HIV Post Exposure Prophylaxis Protocol (See Page 31)

Xylocaine – See Lidocaine HCL (See Page A-18)

- *2-5 years old: 15 mg/dose PO q 4-6 h*

- **Contraindications**
  - Hypersensitivity
  - Narrow angle glaucoma
- Precautions:
  - Pregnancy
  - Cardiac disorders
  - Hyperthyroidism
  - Diabetes mellitus
  - Prostatic hypertrophy
  - Lactation
  - Hypertension
- Side Effects
  - CNS: Tremors, anxiety, insomnia, headache, dizziness, hallucinations, seizures
  - CV: Palpitations, Tachycardia, Hypertension, Chest Pain, Dysrrhythmias
  - EENT: Dry nose, Irritation of nose and throat
  - GI: Nausea, vomiting, anorexia, dry mouth
  - GU: dysuria
  -
- Other Notes
  - Do not use continuously, or more than recommended dose.
  - Rebound congestion may occur.
  - Avoid taking at bedtime, stimulation may occur.
- TMEP Use
  - Allergic Rhinitis/Hay Fever/ Cold Like Symptoms (See Page 10)

Tequin – Gatifloxacin **(No longer used)**

Tetracaine .5% Drops
- Description: Local anesthetic
- Indications: As a topical optic anesthetic (may aid in ocular exam to relieve blepharospasm); removal of foreign bodies
- Dose:
  - 1 or 2 drops 2 to 3 minutes before procedure
  - See appropriate TMEP
- **Contraindications:**
  - Not for prolonged use
- Side Effects:
  - Stinging
  - Tearing
  - Swelling
  - Sensitivity to light
- Adverse Reactions:
  - Conjunctival redness
  - Transient eye pain
  - Hypersensitivity reactions

NOTES:

- 500mg as single dose on day 1, then 250mg daily on days 2 through 5.
- *Pediatric dose (6 months of age or older)*
  - *Z-pac is not indicated for children. The oral suspension is the only dose approved for use in children, and is dosed on a mg/kg basis*
    - *10 mg/kg up to 500 mg the first day; then 5 mg/kg up to 250 mg for the next 4 days*
- **Contraindications**
  - Known allergy to azithromycin
  - Z-pac in children
  - Patients receiving
    - Astemizole (Hismanal – antihistamine taken off of the US market)
    - Cisapride (Propulsid – GI medication)
- Side effects
  - Generally mild and reversible upon discontinuation of therapy
  - Nausea, vomiting, diarrhea, abdominal pain
- Adverse reactions
  - Rare:
    - Angioedema (swelling of the larynx)
    - Cholestatic jaundice
  - Hypersensitivity
- Preparation procedure/ Other notes
  - Can be taken with or without food
  - Continue regimen for duration of prescription
- TMEP Use
  - Bronchitis/Pneumonia (Mild) Protocol (See Page 14)
  - Cellulitis Protocol (See Page 15)
  - Cutaneous Abscess Protocol (See Page 21)
  - Gastroenteritis Protocol (See Page 27)
  - Ingrown Toenail Protocol (See Page 34)
  - Meningitis (Prophylaxis) Protocol (See Page 38)
  - Otitis Externa Protocol (See Page 39)
  - Otitis Media Protocol (See Page 40)
  - Renal Colic/Kidney Stone Protocol (See Page 43)
  - Urinary Tract Infection Protocol (See Page 50)

Zofran (Ondansetron)
- Description: antiemetic
- Indications
  - Prevention of nausea and vomiting
- Adult dose:
  - Oral Dose: 4 - 8 mg PO TID up to 48 hours
  - IV / IM Dose : 4 mg IV over 2-5 minutes or 4 mg IM injection, TID
- *Pediatric dose*
  - *Oral Dose:*
    - *Little information available on dosing in children <= 3 yrs*
    - *4 – 11 years of age: 4 mg ITD up to 48 hours*

Common Name	Nomenclature	AHFS Category	NSN	Recommended NDC	Controlled	JDF status
NELFINAVIR (VIRACEPT) MESYLATE TABLETS 300 TABLETS PER BOTTLE	NELFINAVIR MESYLATE TABLETS 300 TABLETS PER BOTTLE	ANTIVIRALS	6505014876994	63010001030	No	No
NEOMYCIN, POLYMYXIN B SULFATE, & HYDROCORTISONE OTIC SUSP USP 10ML	NEOMYCIN, POLYMYXIN B SULFATE, & HYDROCORTISONE OTIC SUSP USP 10ML					
NETILMICIN SULFATE (USP) 10MG 100 CAPSULES PER BOTTLE	NETILMICIN SULFATE (USP) 10MG 100 CAPSULES PER BOTTLE	ANTIBACTERIALS	6505010430230	24208063562	No	Yes
NEVIRAPINE TABLETS 200MG 60 TABLETS PER BOTTLE	NEVIRAPINE TABLETS 200MG 60 TABLETS PER BOTTLE	DIHYDROPYRIDINES	6505011263842	00069260096	No	No
NIFEDICAN TABLETS 40MG 100 TABLETS PER BOTTLE	NIFEDICAN TABLETS 40MG 100 TABLETS PER BOTTLE	QUINOLONES	6505012589542	00006070568	No	No
OFLOXACIN IN DEXTROSE INJECTION 400ML 100ML PER BOTTLE 24/CASE	OFLOXACIN IN DEXTROSE INJECTION 400ML 100ML PER BOTTLE 24/CASE	QUINOLONES	6505013644123	00062155201	No	No
OFLOXACIN OTIC SOLUTION 0.3% 0.25ML SINGLE DOSE DROPPERETTE 20S	OFLOXACIN OTIC SOLUTION 0.3% 0.25ML SINGLE DOSE DROPPERETTE 20S	ANTIBIOTICS	6505015424952	63395010111	No	No
OFLOXACIN TABLETS 200MG 60 TABLETS PER BOTTLE	OFLOXACIN TABLETS 200MG 60 TABLETS PER BOTTLE	QUINOLONES	6505013464882	00062154002	No	No
OFLOXACIN TABLETS 300MG I.S. 100 TABLETS PER PACKAGE	OFLOXACIN TABLETS 300MG I.S. 100 TABLETS PER PACKAGE	QUINOLONES	6505013462056	00062154005	No	No
ONDANSETRON TABLETS 32MG 30 TABLETS PER BOTTLE	ONDANSETRON TABLETS 32MG 30 TABLETS PER BOTTLE	QUINOLONES	6505013462053	00062154102	No	No
ONDANSETRON HYDROCHLORIDE (ZOFRAN) INJECTION 2MG/ML 20ML VIAL	ONDANSETRON HYDROCHLORIDE (ZOFRAN) INJECTION 2MG/ML 20ML VIAL	5-HT3 RECEPTOR ANTAGONISTS	6505013366184	00173044200	No	Yes
ONDANSETRON (ZOFRAN) HYDROCHLORIDE INJECTION 2MG/ML 2ML VIAL 5/PACKAGE	ONDANSETRON HYDROCHLORIDE (ZOFRAN) INJECTION 2MG/ML 2ML VIAL 5/PACKAGE	5-HT3 RECEPTOR ANTAGONISTS	6505013945963	00173044202	No	Yes
OXYMETAZOLINE HYDROCHLORIDE (AFRIN) NASAL SOLUTION 15ML SPRAY	OXYMETAZOLINE HYDROCHLORIDE NASAL SOLUTION 15ML SPRAY	VASOCONSTRICTORS	6505008684177	00182144464	No	Yes
PRIMAQUINE PHOSPHATE TABLETS USP 15MG 100S	PRIMAQUINE PHOSPHATE TABLETS USP 15MG 100S	ANTIMALARIALS	6505013462465	00024159601	No	Yes
PROMETHAZINE HYDROCHLORIDE INJECTION USP 25MG/ML 10ML MDV 10S	PROMETHAZINE HYDROCHLORIDE INJECTION USP 25MG/ML 10ML MDV 10S	ANTIHISTAMINE DRUGS	6505015401933	66758060119	No	Yes
PROMETHAZINE HYDROCHLORIDE (PHENERGAN) TABLETS USP 25 MG 100S	PROMETHAZINE HYDROCHLORIDE TABLETS USP 25 MG 100S	PHENOTHIAZINE DERIVATIVES	6505013648557	00591530701	No	Yes

Common Name	Nomenclature	AHFS Category	NSN	Recommended NDC	Controlled	JDF status
ACETAMINOPHEN 325MG (TYLENOL) TABLET 100S	ACETAMINOPHEN 325MG TABLET 100S	ANALGESICS AND ANTIPYRETICS, MISC	6505015302679	51111046878	No	Yes
ACETAMINOPHEN (TYLENOL) 325MG TABLETS 1000S	ACETAMINOPHEN TABLETS 325MG 1000S	ANALGESICS AND ANTIPYRETICS, MISC	6505014367129	51079039820	No	Yes
ACETAZOLAMIDE TABLETS USP 250MG 100 TABLETS PER BOTTLE	ACETAZOLAMIDE TABLETS USP 250MG 100 TABLETS PER BOTTLE	CARBONIC ANHYDRASE INHIBITORS	6505006849857	51672402301	No	Yes
ALBUTEROL SULFATE (CFC-FREE) INHALATION AERO 90MCG ACTUATIONS	ALBUTEROL SULFATE (CFC-FREE) INHALATION AERO 90MCG AER W/ADAP & 7 GM 200 ACTUATIONS	SYMPATHOMIMETIC (ADRENERGIC) AGENTS	6505015382871	00085113201	No	Yes
ASPIRIN (ST JOSEPH'S CHILDREN'S ASPIRIN) 81MG TAB CHEW 36S	ASPIRIN 81MG TAB CHEW 36S	SALICYLATES	6505010338998	00904404073	No	Yes
ASPIRIN TABLETS USP 0.324GM 100S	ASPIRIN TABLETS USP 0.324GM 100S	SALICYLATES	6505001009985	00904200960	No	Yes
ATOVAQUONE 250MG & PROGUANIL 100MG TABLETS (MALARONE) 100S	ATOVAQUONE 250MG & PROGUANIL 100MG TABLETS (MALARONE) 100S	ANTIPROTOZOALS, MISC	6505014919430	00173067501	No	Yes
AZITHROMYCIN TABLETS 250MG,185 (3 2-PAKS 6S)	AZITHROMYCIN TABLETS 250MG,185 (3 2-PAKS 6S)	OTHER MACROLIDES	6505014491618	00781149688	No	Yes
BISACODYL (DULCOLAX) TABLETS USP 5MG FILM ENTERIC I.S. 100S	BISACODYL TABLETS USP 5MG FILM ENTERIC I.S. 100S	CATHARTICS AND LAXATIVES	6505001182759	00574000411	No	Yes
CEFTRIAXONE SODIUM STERILE USP 2GM VIAL 10S	CEFTRIAXONE SODIUM STERILE USP 2GM VIAL 10S	THIRD GENERATION CEPHALOSPORINS	6505012192760	00004196401	No	Yes
CEFTRIAXONE SODIUM STERILE USP 2GM VIAL 10 VIALS PER PACKAGE	CEFTRIAXONE SODIUM STERILE USP 2GM VIAL 10 VIALS PER PACKAGE	CEPHALOSPORINS	6505012293149	00781320995	No	Yes
CEPHALEXIN (KEFLEX) 250MG CAPSULES 100S	CEPHALEXIN 250MG CAPSULES 100S	FIRST GENERATION CEPHALOSPORINS	6505001656545	00093314501	No	Yes
CHLOROQUINE PHOSPHATE TABLETS USP 500MG 25 TABLETS PER BOTTLE 10/CASE	CHLOROQUINE PHOSPHATE TABLETS USP 500MG 25 TABLETS PER BOTTLE 10/CASE	ANTIMALARIALS	6505012679662	00143212522	No	Yes
CIPROFLOXACIN (CIPRO) 400MG IN 200ML D5W PIGGYBACK BAGS 24S	CIPROFLOXACIN (CIPRO) 400MG IN 200ML D5W PIGGYBACK BAGS 24S	QUINOLONES	6505013368179	00085174102	No	No
CIPROFLOXACIN CONCENTRATE (CIPRO) FOR INJECTION 10MG/ML 40ML VI VIAL 10S	CIPROFLOXACIN CONCENTRATE (CIPRO) FOR INJECTION 10MG/ML 40ML VIAL 10S	QUINOLONES	6505014868591	00085173101	No	Yes
CIPROFLOXACIN TABLETS USP 250MG I.S. 100S	CIPROFLOXACIN TABLETS USP 500MG I.S. 100S	QUINOLONES	6505012738650	00172531210	No	Yes

Common Name	Nomenclature	AHFS Category	NSN	Recommended NDC	Controlled	JDF status
ERTAPENEM SODIUM (INVANZ) 10GM VIAL 10S	ERTAPENEM SODIUM 10GM VIAL 10S	CARBAPENEMS	6505015035374	00006384371	No	Yes
FLUCONAZOLE (DIFLUCAN) TABLETS 100MG 100 TABLETS PER PACKAGE	FLUCONAZOLE TABLETS 100MG 100 TABLETS PER PACKAGE	AZOLES	6505013198233	00049342041	No	No
FLUCONAZOLE TABLETS (DIFLUCAN) 400MG 30 TABLETS PER BOTTLE	FLUCONAZOLE TABLETS 100MG 30 TABLETS PER BOTTLE	AZOLES	6505013198248	00049342030	No	No
GATIFLOXACIN (ZYMAR) OPHTHALMIC SOLUTION 0.3% 2.5ML	GATIFLOXACIN (ZYMAR) OPHTHALMIC SOLUTION 0.3% 2.5ML	ANTIBACTERIALS	6505015090735	00023921803	No	No
HETASTARCH 6% IN LACTATED ELECTROLYTES 500ML PLASTIC BAG (HESTEN	HETASTARCH 6% IN LACTATED ELECTROLYTES 500ML PLASTIC BAG (HESTEN	REPLACEMENT PREPARATIONS	6505014688636	00409155554	No	Yes
HETASTARCH 6% IN SODIUM CHLORIDE 500ML PLASTIC BAG (HESPAN) 12/S	HETASTARCH 6% IN SODIUM CHLORIDE 500ML PLASTIC BAG (HESPAN) 12/S	REPLACEMENT PREPARATIONS	6505012811247	00264196510	No	Yes
IBUPROFEN TABLETS (MOTRIN) USP 400MG 500S	IBUPROFEN TABLETS USP 400MG 500S	OTHER NONSTEROIDAL ANTIINFLAMMATORY AGENTS	6505001288035	53746013105	No	Yes
IBUPROFEN TABLETS (MOTRIN) USP 800MG 500 TABLETS PER BOTTLE	IBUPROFEN TABLETS USP 800MG 500 TABLETS PER BOTTLE	OTHER NONSTEROIDAL ANTIINFLAMMATORY AGENTS	6505001490862	53746013705	No	Yes
LAMIVUDINE 150MG & ZIDOVUDINE 300MG (COMBIVIR) CAPSULES 60S	LAMIVUDINE 150MG & ZIDOVUDINE 300MG (COMBIVIR) CAPSULES 60S	NUCLEOSIDE AND NUCLEOTIDE REVERSE TRANSCRIPTASE INHIBITORS	6505014629945	00173059500	No	Yes
LEVOFLOXACIN IN DEXTROSE 5% 100ML (LEVAQUIN) INJECTION 25MG/ML 25ML SINGLE DOSE VIAL	LEVOFLOXACIN IN DEXTROSE 5% 100ML (LEVAQUIN) INJECTION 25MG/ML 25ML SINGLE DOSE VIAL	QUINOLONES	6505014974346	00045006801	No	Yes
LEVOFLOXACIN (LEVAQUIN) TABLETS 500MG I.S. 100S	LEVOFLOXACIN TABLETS 500MG I.S. 100S	QUINOLONES	6505014446935	00045152510	No	Yes
LIDOCAINE HYDROCHLORIDE 2% INJECTION USP 20ML VIAL	LIDOCAINE HYDROCHLORIDE 2% INJECTION USP 20ML VIAL	LOCAL ANESTHETICS	6505005988117	00188012001	No	Yes
LOPERAMIDE HYDROCHLORIDE (IMODIUM) CAPSULES 2MG I.S. 100 CAPSULE	LOPERAMIDE HYDROCHLORIDE (IMODIUM) CAPSULES 2MG I.S. 100 CAPSULE PACKAGE	ANTIDIARRHEA AGENTS	6505012385932	51079099020	No	Yes

2006 Joint Formulary Authors

U.S. SPECIAL OPERATIONS COMMAND (USSOCOM) OFFICE OF THE COMMAND SURGEON

COL Warner D. ("Rocky") Farr, MD
Command Surgeon

CPT Steven L. Briggs, USA, SP, APA, MPAS-C
Command Physician Assistant
Chief, Medical Education and Training

USSOCOM Curriculum Examination Board

JF Rick Hammesfahr, MD, AAOS
Chairman, Curriculum and Evaluation Board
Director, The Center for Orthopaedics and Sports Medicine
Marietta, Ga

Robert W. Hesse, RN, NREMT-P, I/C
Clinical Manager, PHI Air Medical

Eleanor A. O'Rangers, Pharm. D.
Director of Medical Affairs
Crestor US Brand Team
AstraZeneca LP

Common Name	Nomenclature	AHFS Category	NSN	Recommended NDC	Controlled	JDF status
MEFLOQUINE HYDROCHLORIDE (LARIAM) TABLETS 250MG I.S. 25S	MEFLOQUINE HYDROCHLORIDE TABLETS 250MG I.S. 25S	ANTIMALARIALS	6505013151275	00004017202	no	Yes
MELOXICAM 15MG TABLETS 100S	MELOXICAM 15MG TABLETS 100S	NONSTEROIDAL ANTI-INFLAMMATORY AGENTS	6505015413243	00597003001	No	Yes
METRONIDAZOLE HCL (FLAGYL IV RTU) 500MG IN 100ML SODIUM CHLORIDE	METRONIDAZOLE HCL 500MG IN 100ML SODIUM CHLORIDE PIGGYBACK BAGS 24S	ANTIPROTOZOALS, MISC	6505014626450	00338105548	No	Yes
METRONIDAZOLE (FLAGYL) TABLETS USP 250MG I.S. 100S	METRONIDAZOLE TABLETS USP 250MG I.S. 100S	ANTIPROTOZOALS, MISC	6505011424914	00182133089	No	Yes
MORPHINE SULFATE 15 MG/ML INJECTION 20ML	MORPHINE SULFATE 15 MG/ML INJECTION 20ML	OPIATE AGONISTS	6505011533284	10019017963	Yes	Yes
MORPHINE SULFATE INJECTION 10MG AUTOMATIC INJECTOR	MORPHINE SULFATE INJECTION 10MG AUTOMATIC INJECTOR	OPIATE AGONISTS	6505013025530		Yes	Yes
MORPHINE SULFATE INJECTION 10MG/ML 1ML VIAL 25 PER PACKAGE	MORPHINE SULFATE INJECTION 10MG/ML 1ML VIAL 25 PER PACKAGE	OPIATE AGONISTS	6505014830274	10019017844	Yes	Yes
MORPHINE SULFATE INJECTION 10MG/ML, 1ML CARTRIDGE UNIT, LUER LOC	MORPHINE SULFATE INJECTION 10MG/ML, 1ML CARTRIDGE UNIT, LUER LOCK, NEEDLELESS, 10S	OPIATE AGONISTS	6505015055813	00409126130	Yes	Yes
MOXIFLOXACIN (AVELOX) HYDROCHLORIDE	MOXIFLOXACIN HYDROCHLORIDE	QUINOLONES	6505015034772	00026858169	No	No
MOXIFLOXACIN (AVELOX) HYDROCHLORIDE TABLETS 50S	MOXIFLOXACIN HYDROCHLORIDE TABLETS 50S	QUINOLONES	6505015163194	00026858188	No	No
MOXIFLOXACIN (AVELOX)HYDROCHLORIDE TABLETS 5S	MOXIFLOXACIN HYDROCHLORIDE TABLETS 5S	QUINOLONES	6505015163201	00026858141	No	No
MUPIROCIN (BACTROBAN) 2% OINTMENT 22GM	MUPIROCIN 2% OINTMENT 22GM	ANTIBACTERIALS	6505014805678	00029152544	No	Yes
NALOXONE (NARCAN HCL 1MG/ML INJECTION 2ML SYRINGE 10S	NALOXONE HCL 1MG/ML INJECTION 2ML SYRINGE 10S	OPIATE ANTAGONISTS	6505014070213	00548146900	No	Yes
NALOXONE HCL INJ (NARCAN) 0.4MG/ML 1ML VIAL 10S	NALOXONE HYDROCHLORIDE INJ 0.4 MG/ML 1ML VIAL 10S	OPIATE ANTAGONISTS	6505015334126	00409121501	No	Yes
NALOXONE HYDROCHLORIDE (NARCAN) INJECTION USP 0.4MG/ML 1ML AMPUL	NALOXONE HYDROCHLORIDE INJECTION USP 0.4MG/ML 1ML AMPUL 10/BX	OPIATE ANTAGONISTS	6505000797867	63481035810	No	Yes

Common Name	Nomenclature	AHFS Category	NSN	Recommended NDC	Controlled	JDF status
PSEUDOEPHEDRINE HYDROCHLORIDE (SUDAFED) TABLETS USP 30MG 24S	PSEUDOEPHEDRINE HYDROCHLORIDE TABLETS USP 30MG 24S	SYMPATHOMIMETIC (ADRENERGIC) AGENTS	6505001490098	00904505324	Yes	Yes
QUININE SULFATE CAPSULES USP 325MG 100 CAPSULES PER BOTTLE	QUININE SULFATE CAPSULES USP 325MG 100 CAPSULES PER BOTTLE	ANTIMALARIALS	6505009579532	00172417260	No	No
QUININE SULFATE CAPSULES USP 325MG 1000 CAPSULES PER BOTTLE	QUININE SULFATE CAPSULES USP 325MG 1000 CAPSULES PER BOTTLE	ANTIMALARIALS	6505010428040	52544071610	No	No
QUININE SULFATE TABLETS 260MG 100 TABLETS PER BOTTLE	QUININE SULFATE TABLETS 260MG 100 TABLETS PER BOTTLE	ANTIMALARIALS	6505011137514	00172300160	No	No
QUININE SULFATE TABLETS USP 260 MG I.S. 100 TABLETS PER PACKAGE	QUININE SULFATE TABLETS USP 260 MG I.S. 100 TABLETS PER PACKAGE	ANTIMALARIALS	6505012399803	47679050735	No	No
RANITIDINE (ZANTAC) INJECTION USP 25MG/ML 2ML SINGLE DOSE VIAL T	RANITIDINE INJECTION USP 25MG/ML 2ML SINGLE DOSE VIAL 10/PACKAGE	HISTAMINE H2-ANTAGONISTS	6505012085955	00173036238	No	Yes
RANITIDINE (ZANTAC) TABLETS USP 150MG 60 TABLETS PER BOTTLE	RANITIDINE TABLETS USP 150MG 60 TABLETS PER BOTTLE	HISTAMINE H2-ANTAGONISTS	6505011607702	00781188360	No	Yes
TETRACAINE HYDROCHLORIDE (PONTOCAINE) OPHTHALMIC SOLUTION 0.5% 15 ML	TETRACAINE HYDROCHLORIDE OPHTHALMIC SOLUTION 0.5% 15 ML	LOCAL ANESTHETICS	6505005824737	24208092064	No	Yes
TRANSMUCOSAL FENTANYL (ACTIQ) 400MCG, 30'S	TRANSMUCOSAL FENTANYL 400MCG, 30'S	OPIATE AGONISTS	6505NCM060544	63459050430	Yes	No

Common Name	Nomenclature	AHFS Category	NSN	Recommended NDC	Controlled	JDF status
CIPROFLOXACIN (CIPRO) TABLETS USP 500MG I.S. 30 TABLETS PER PACK	CIPROFLOXACIN TABLETS USP 500MG I.S. 30 TABLETS PER PACKAGE	QUINOLONES	6505014912834		No	Yes
DEXAMETHASONE SODIUM PHOSPHATE INJECTION 4MG/ML 30ML	DEXAMETHASONE SODIUM PHOSPHATE INJECTION 4MG/ML 30ML	ADRENALS	6505015225164	63323016530	No	Yes
DEXTROSE TABLETS 45 GRAMS MULTI-USE SQUEEZE TUBE 12 TABLETS	DEXTROSE TABLETS 45 GRAMS MULTI-USE SQUEEZE TUBE 12 TABLETS	CALORIC AGENTS	6505014253165	08290328230	No	No
DIAZEPAM 5MG TABLETS I.S. 100S	DIAZEPAM 5MG TABLETS I.S. 100S	BENZODIAZEPINES	6505010985802	51079028521	Yes	Yes
DIAZEPAM 5MG/ML, 2ML AUTOINJECTOR (CANA)	DIAZEPAM 5MG/ML, 2ML AUTOINJECTOR (CANA)	BENZODIAZEPINES	6505012740951		Yes	Yes
DIAZEPAM (VALIUM) INJ 5MG/ML MDV 5S	DIAZEPAM INJECTION 5MG/ML MDV 5S	BENZODIAZEPINES	6505015138434	00409321302	Yes	Yes
DIAZEPAM (VALIUM) INJECTION 5MG/ML 2ML SYRINGE LUER LOCK, W/O NE	DIAZEPAM INJECTION USP 5MG/ML 2 ML UNIT 10 PER PACKAGE	BENZODIAZEPINES	6505015053476	00409127332	Yes	Yes
DIPHENHYDRAMINE HYDROCHLORIDE (BENADRYL) CAPSULES USP 50MG 100S	DIPHENHYDRAMINE HYDROCHLORIDE CAPSULES USP 50MG 100S	ETHANOLAMINE DERIVATIVES	6505001168350	00555005902	No	Yes
DIPHENHYDRAMINE HYDROCHLORIDE INJ USP 50MG/ML 1ML CARPUJECT 10S	DIPHENHYDRAMINE HYDROCHLORIDE INJ USP 50MG/ML 1ML CARPUJECT 10S	ETHANOLAMINE DERIVATIVES	6505015182962	00409229031	No	Yes
DIPHENHYDRAMINE HYDROCHLORIDE (BENADRYL) INJ USP 50MG/ML 1ML VI	DIPHENHYDRAMINE HYDROCHLORIDE INJ USP 50MG/ML 1ML VIAL 25S	ETHANOLAMINE DERIVATIVES	6505010917538	00641037625	No	Yes
DOXYCYCLINE HYCLATE (VIBRATABS) TABLETS USP 100 MG I.S. 30 TABLE	DOXYCYCLINE HYCLATE TABLETS USP 100 MG I.S. 30 TABLETS/PACKAGE	TETRACYCLINES	6505014915506		No	Yes
DOXYCYCLINE HYCLATE (VIBRATABS) TABLETS USP 100MG 500S	DOXYCYCLINE HYCLATE TABLETS USP 100MG 500S	TETRACYCLINES	6505011534335	00172362670	No	Yes
DOXYCYCLINE HYCLATE (VIBRATABS) TABLETS USP 100MG, I.S., 100S	DOXYCYCLINE HYCLATE TABLETS USP 100MG, I.S., 100S	TETRACYCLINES	6505015050146	00182153589	No	Yes
EPINEPHRINE INJECTION USP 0.1 MG/ML 10ML LIFESHIELD SYRINGE 10S	EPINEPHRINE INJECTION USP 0.1 MG/ML 10ML LIFESHIELD SYRINGE 10S	SYMPATHOMIMETIC (ADRENERGIC) AGENTS	6505015273957	00074492134	No	Yes
EPINEPHRINE INJECTION USP0.1MG PER ML SYRINGE-NEEDLE UNIT10ML10S	EPINEPHRINE INJECTION USP0.1MG PER ML SYRINGE-NEEDLE UNIT10ML10S	SYMPATHOMIMETIC (ADRENERGIC) AGENTS	6505010932384	00074490118	No	Yes

UNITED STATES SPECIAL OPERATIONS COMMAND
ATTN: SOCS-SG
7701 Tampa Point Blvd.
MacDill AFB, FL 33621-5323
OFFICIAL BUSINESS

MEDIA MAIL